Rocky Flats Environmental Technology Site

RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

CLOSURE PROJECT FOR BUILDINGS T441A and T121A

REVISION 0

October 24, 2002

CLASSIFICATION REVIEW NOT REQUIRED PER EXEMPTION NUMBER CEX-005-02

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October 24, 2002

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ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Emergency Response, Compensation and Liability Act
$DCGL_{EMC}$	Derived Concentration Guideline Level – elevated measurement comparison
$DCGL_W$	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U S Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U S Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds

EXECUTIVE SUMMARY

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the DPP (10/8/98) and compliant disposition and waste management of Buildings T441A and T121A Because these facilities were anticipated to be Type 1 facilities, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). All facility surfaces were characterized in this RLC, including the interior and exterior surfaces [i e , floors (slabs), walls, ceilings and roofs] Environmental media beneath and surrounding these facilities were not within the scope of this RLCR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA

The RLC encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP) The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Reports

Results indicate that no radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400 5. Non-friable asbestos containing building materials are located in Building T441A All bulk samples of building materials suspected of containing friable asbestos were "None Detected" All beryllium sample results were less than 0 1 $\mu g/100cm^2$ Fluorescent light ballast may contain PCBs Any PCB ballast and asbestos containing materials will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal,* as applicable

Based upon this RLCR, Buildings T441A and T121A are considered to be Type 1 facilities To ensure that the facilities remain free of contamination and that RLC data remain valid, isolation controls have been established, and the facilities have been posted accordingly

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1 INTRODUCTION

A Reconnaissance Level Characterization (RLC) was performed to enable compliant disposition and waste management of Buildings T441A and T121A Because these facilities were was anticipated to be Type 1 facilities, a PDS characterization was performed All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facilities [i e , floors (slabs), walls, ceilings and roofs] Environmental media beneath and surrounding theses facilities were not within the scope of this RLC Report (RLCR) and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed, among these are Buildings T441A and T121A The locations of these facilities are shown in Attachment A. These facilities no longer support the RFETS mission and need to be removed to reduce Site infrastructure, risks and/or operating costs

Before these facilities can be removed, a Pre-Demolition Survey (PDS) must be conducted, this document presents the PDS results The PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP) The PDS built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report

1.1 Purpose

The purpose of this report is to communicate and document the results of the PDS effort PDSs are performed before building demolition to define the final radiological and chemical conditions of a facility Final conditions are compared with the release limits for radiological and non-radiological contaminants PDS results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types

1.2 Scope

This report presents the final radiological and chemical conditions of Buildings T441A and T121A Environmental media beneath and surrounding the facility is not within the scope of this RLCR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA

1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this RLC were the same DQOs identified in the Pre-Demolition survey Plan for D&D Facilities (MAN-127-PDSP) Refer to section 2 0 of MAN-127-PDSP for these DQOs

2 HISTORICAL SITE ASSESSMENT

A Facility-specific Historical Site Assessment (HSA) was conducted to understand the facility history and related hazards The assessment consisted of facility walk-downs, interviews, and document review, including review of the Historical Release Report (refer to the D&D Characterization Protocol, MAN-077-DDCP) Results were used to identify data gaps and needs, and to develop radiological and chemical characterization packages Results of the facility-specific HSAs were documented in facility-specific Historical Site Assessment Reports (HSAR) Refer to Attachment B for a copy of the HSARs for Buildings T441A and T121A In summary, the HSAR identified no potential for radiological and chemical hazards, except the potential for asbestos containing materials and PCBs in paint and light ballast

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Buildings T441A and T121A were characterized for radiological hazards per the PDSP Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces Measurements were performed to evaluate the contaminants of concern Based upon a review of historical and process knowledge, building walk-downs, and MARSSIM guidance, Radiological Characterization Plans were developed during the planning phases that describe the minimum survey requirements (refer to the RISS Characterization Project files)

Two radiological survey packages were developed for the interior and exterior of Buildings T441A and T121A The survey packages were developed in accordance with Radiological Safety Practices (RSP) 16 01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure* Total surface activity (TSA), removable surface activity (RSA), and scan measurements were collected in accordance with RSP 16 02 *Radiological Surveys of Surfaces and Structures.* Radiological survey data were verified, validated and evaluated in accordance with RSP 16 04, *Radiological Survey/Sample Data Analysis* Quality control measures were implemented relative to the survey process in accordance with RSP 16 05, *Radiological Survey/Sample Quality Control.* Radiological survey data, statistical analysis results, and survey locations are presented in Attachment C, Radiological Data Summary and Survey Maps The radiological survey unit packages are maintained in the RISS Characterization Project files

TSA measurements, RSA measurements, and scan surveys were performed on the interior and exterior of the facility The PDS data confirmed that the facility does not contain radiological contamination above the surface contamination guidelines provided in the PDSP Isolation control postings are displayed on the buildings to ensure no radioactive materials are introduced

Initial surveys at some exposed metal locations on the exteriors of T441A and T121A indicated elevated activity Subsequent investigations showed that all of the elevated activity meets the PDSP unrestricted release limits for both transuranics and uranium Refer to the applicable data summaries in Attachment C, Radiological Data Summary and Survey Maps, for details on the investigation results

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Buildings T441A and T121A were characterized for chemical hazards per the PDSP Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on or in these facilities Based upon a review of historical and process knowledge, visual inspections, and PDSP DQOs, additional sampling needs were determined. Chemical Characterization Packages (refer to RISS Characterization Project files) were developed during the planning phases that describe sampling requirements and the justification for the sample locations and estimated sample numbers Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, and PCBs Refer to Attachment D, Chemical Data Summaries and Sample Maps, for details on sample results and sample locations

4.1 Asbestos

A survey of building materials suspected of containing asbestos was conducted in the aforementioned buildings in accordance with the PDSP A CDPHE-certified asbestos inspector conducted the inspection and sampling in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 1* Building materials suspected of containing asbestos were identified for sampling at the discretion of the inspector

Non-friable asbestos containing building materials are identified in Building T441A The 9" vinyl floor tiles and adhesive, beneath the carpet, were 4% Chrysotile, and the black tar roofing material was 60% Chrysotile All bulk samples of building materials suspected of containing friable asbestos were "None Detected" All asbestos bulk sampling results from T121A were "None Detected " Asbestos laboratory analysis data and location maps are contained in Attachment D, "Chemical Data Summaries and Sample Maps " Maps that did not contain any sample locations were not included in this report.

4.2 Beryllium (Be)

Based on the HSAR and personnel interviews, these buildings were anticipated Type 1 facilities However, historical beryllium data indicated beryllium contamination on equipment in T441A that had since been removed and the area decontaminated Follow-up beryllium smear results were less than 0 1µg/100cm^2 Nevertheless, random and biased beryllium sampling was conducted in T441A to confirm the follow-up data results and verify the facility was successfully decontaminated Therefore, biased beryllium sampling was performed in T121A, and random and biased sampling was performed in T441A Beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999* Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition

All biased beryllium smear sample results from T121A were less than 0 1 µg/100cm^2 and all random and biased beryllium smear sample results from T441A were less than 0 1 µg/100cm^2 Beryllium laboratory sample data and location maps are contained in Attachment D, "Chemical Data Summaries and Sample Maps " Maps that did not contain any sample locations were not included in this report

4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]

Based on the HSAR, interviews and facility walk-downs of the T121A and T441A facilities, there are no RCRA/CERCLA concerns None of the buildings have a history of spills or releases of RCRA/CERCLA regulated materials, and there were no observations to suggest contamination Therefore, RCRA/CERCLA constituent sampling was not performed in these facilities

The buildings may contain some RCRA regulated items, such as mercury thermostats, fluorescent light bulbs, mercury vapor light bulbs, mercury containing gauges, circuit boards, and lead-acid batteries These items will be removed prior to demolition and managed in accordance with the CHWA

Sampling for lead in paint in the facilities was not performed Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) wastes, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal

4.4 Polychlorinated Biphenyls (PCBs)

Based on the HSAR, interviews and facility walk-downs, no PCB-containing equipment or wastes were ever present in the buildings, making the potential for PCB contamination resulting from spills highly unlikely Therefore, PCB sampling was not performed

Based on the age of T441A (constructed prior to 1980), paints used may contain PCBs, and painted surfaces will need to be disposed of as PCB Bulk Product Waste

Because these facilities may contain fluorescent light ballast containing PCBs, fluorescent light fixtures will be inspected to identify PCB ballast during removal operations PCB ballast will be identified based on factors such as labeling (e g , PCB-containing and non-PCB-containing), manufacturer, and date of manufacturing All ballast that do not indicate non-PCB-containing are assumed to be PCB-containing

5 PHYSICAL HAZARDS

Physical hazards associated with Buildings T121A and T141A are consistent with those commonly found in standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls The facilities have been relatively well maintained and are in good physical condition, and therefore, do not present hazards associated with building deterioration There are no unique physical hazards associated with these buildings Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices

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6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of Buildings T121A and T441A, and consequent waste management, are of adequate quality to support the decisions documented in this report The data presented in this report (Attachments C and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate

- the *number* of samples and surveys,
- the *types* of samples and surveys;
- the sampling/survey process as implemented "in the field", and,
- the laboratory analytical process, relative to accuracy and precision considerations

Details of the DQA are provided in Attachment E

7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of Buildings T441A and T121A will generate a variety of wastes Estimated waste types and waste volumes are presented below All wastes can be disposed of as sanitary waste, except asbestos containing material and PCB Bulk Product Waste There is no radioactive or hazardous waste Asbestos and PCB ballasts will be managed pursuant to Site asbestos and PCB abatement and waste management procedures

Waste Volume Estimates and Material Types, Buildings T441A & T121A

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste
T441A	0	500	500	600	500	Black tar roofing – 548 cubic feet, 9" vinyl floor tiles and mastic – 183 cubic feet	None
T121A	0	700	700	750	800	0	None

8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Buildings T121A and T441A are classified as RFCA Type 1 facilities pursuant to the RFETS Decommissioning Program Plan (DPP, K-H, 1999) The Type 1 classification is based on a review of historical and process knowledge, and newly acquired RLC data

The RLC for T121A and T441A was performed in accordance with the DDCP and PDSP, all PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. Buildings T121A and T441A do not contain radiological or hazardous wastes Any PCB ballast and asbestos containing materials will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal,* as applicable Environmental media beneath and surrounding the facilities will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA

To ensure that the Type 1 T121A and T441A facilities remains free of contamination and that RLC data remain valid, isolation controls have been established, and the facility is posted accordingly

9 REFERENCES

DOE/RFFO, CDPHE, EPA, 1996. Rocky Flats Cleanup Agreement (RFCA), July 19, 1996

DOE Order 5400 5, "Radiation Protection of the Public and the Environment "

EPA, 1994 "The Data Quality Objective Process," EPA QA/G-4

K-H, 1999 Decommissioning Program Plan, June 21, 1999

MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program*, Rev 1, November 1, 2001

MAN-076-FDPM, *Facility Disposition Program Manual*, Rev 3, January 1, 2002

MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol*, Rev 3, July 15, 2002

MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities*, Rev 1, July 15, 2002

MARSSIM - Multi-Agency Radiation Survey and Site Investigation Manual, December 1997 (NUREG-1575, EPA 402-R-97-016)

PRO-475-RSP-16 01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure*, Rev 1, May 22, 2001

PRO-476-RSP-16 02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev. 1, May 22, 2001.

PRO-477-RSP-16 03, *Radiological Samples of Building Media*, Rev 1, May 22, 2001

PRO-478-RSP-16 04, *Radiological Survey/Sample Data Analysis for Final Status Survey*, Rev 1, May 22, 2001

PRO-479-RSP-16 05, *Radiological Survey/Sample Quality Control for Final Status Survey*, Rev 1, May 22, 2001

PRO-563-ACPR, Asbestos Characterization Procedure, Revision 0, August 24, 1999

PRO-536-BCPR, Beryllium Characterization Procedure, Revision 0, August 24, 1999

RFETS, Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition

RFETS, Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal

RFCA Standard Operation Protocol for Recycling Concrete, September 28, 1999

RFETS, Historical Site Assessment Report for Building T121A, August, 2002

RFETS, Historical Site Assessment Report for Building T441A, August 2002

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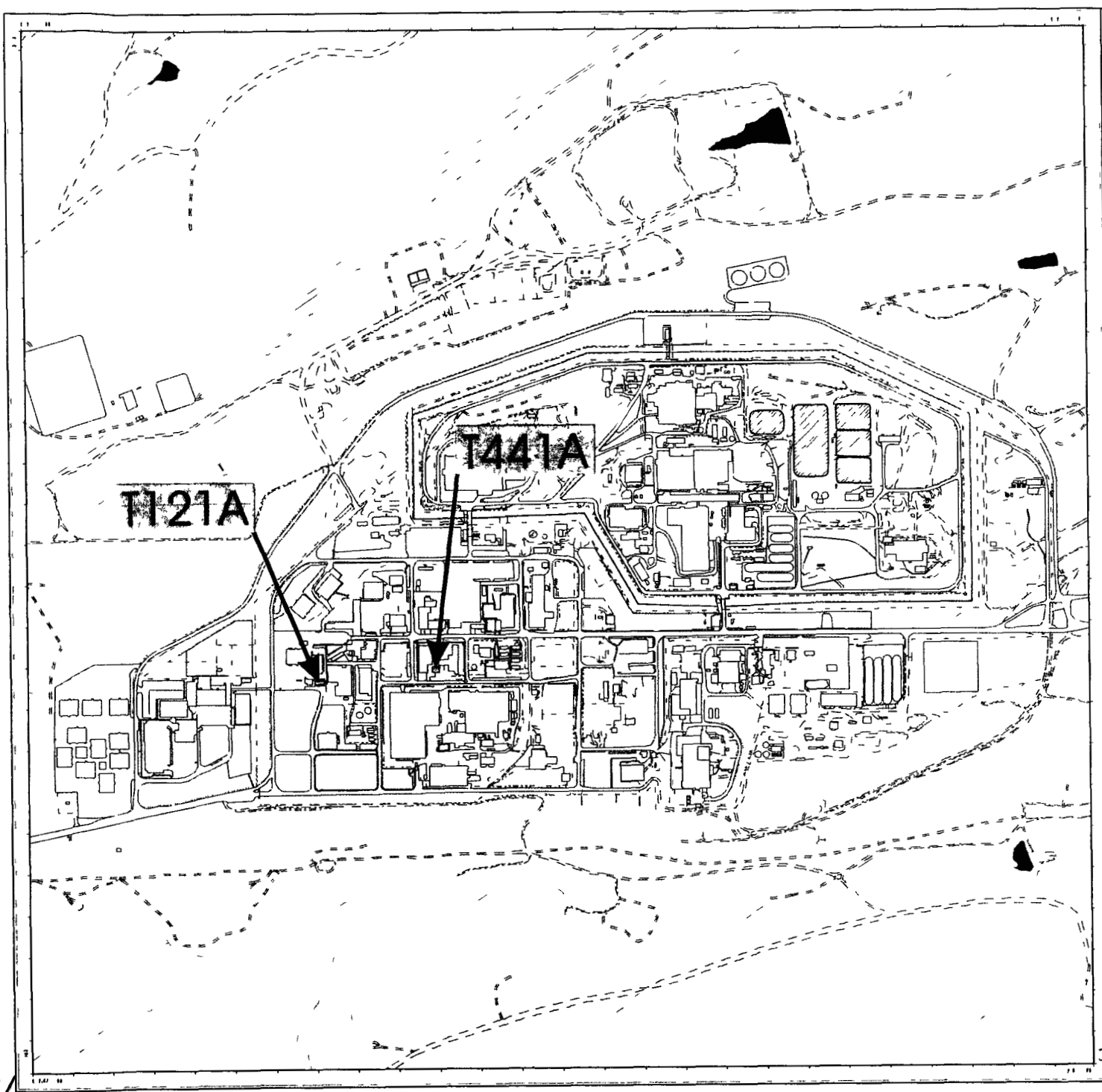
ATTACHMENT A

Facility Location Map



Building Cluster T121A & T441A

Standard Map Features

- Buildings and other structures
- Solar Evaporation Ponds (SEPs)
- Lakes and ponds
- Streams ditches or other drainage features
- Fences and other barriers
- Paved roads
- Dirt roads

DATA SOURCE BASE FEATURES
Buildings, fences hydrography roads and other structures from 1994 aerial fly-over data captured by EG&G RSL Las Vegas
Digitized from the orthophotographs. 1/95

Scale = 1 12450
1 inch represents approximately 1038 feet

250 0 500 1000 ft

State Plane Coordinate Projection
Colorado Central Zone
Datum. NAD27

U S Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. 303-966-7707

Prepared by:
DynCorp
THE ART OF TECHNOLOGY

Prepared for:
KAISER HILL

MAP ID: FY 2002

October 22 2002

NT_Svr w:/projects/fy2002/02 0051/overview_528_559_561.cdr

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ATTACHMENT B

Historical Site Assessment Reports

D&D RISS Facility Characterization
Historical Site Assessment Report
August, 2002 Rev. 0

Facility ID: (AREA 5 GROUP 3) Building 119, T119B, 119H, 121, T121A, 122, 122S, T124A, 127, 128, and T122A

Anticipated Facility Type (1, 2, or 3) Building 119, T119B, 119H, 121, T121A, 122, 122S, T124A, 127, and 128 are anticipated Type 1 facilities. Trailer T122A is an anticipated type 2 facility

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with *D&D Characterization Protocol*, RFETS MAN-077-DDCP, latest version, and *Facility Disposition Program Manual*, RFETS MAN-076-FDPM, latest version

Physical Description

Building 119

Building 119 is an 11,200 sq ft. WSLLC Fitness Center constructed in 1988 This building is a steel frame structure with insulated metal siding mounted to the steel frame and an insulated metal roof The building is constructed on a concrete pad The interior is configured with several support offices and a main fitness center used by WSLLC personnel

Building 119 has the following utilities electrical, plant water, plant sanitary, plant steam, and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers

Trailer T119B

Trailer T119B is a 15,400 square-foot general field office trailer and was acquired in 1991 This modular trailer is approximately 120-feet wide by 130-feet long T119B has corrugated metal siding with corrugated metal skirting The entrances have wooden stairs leading to a wooded enclosure

The interior is primarily a cubical layout, but has several hard-walled offices, conference rooms, and rest rooms Interior walls are wallboard, the ceiling is a drop ceiling with acoustical tiles and recessed lights The floor is primarily covered with carpet except in the bathrooms and dock entranceways, which are covered with vinyl tile

Trailer T119B has the following utilities electrical, plant water, plant sanitary, and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers

119H Helicopter Pad

The 119H Helicopter Pad located south of Trailer T119B were originally an asphalt-paved parking lot constructed in the 1960s In the 1970s an area where Trailer T119B is located was designated as the 119H Helicopter Pad The Helicopter Pad was moved approximately 100 feet south to its current location The 119H Helicopter Pad has no designated square footage, but is estimated to be approximately 2500 sq ft.

The 119H Helicopter Pad has no utility hook-ups

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Building 121

Building 121 is a 6530 sq ft building constructed in 1953 and has historically housed site security operations The original potion of building 121 is a pored concrete structure constructed on a concrete pad. The Secondary Alarm Station (SAS) and dispatch area of the building has fortified walls (18-inch thick concrete walls) Building 121 has had several addition built on to the structure during the 1980s These additions are the locker room on the west side of the building and Rooms 112A and 112B to expand the SAS on the east side of the building These additions were constructed with concrete block walls and a prefabricated concrete roof, and built on a concrete pad

Building 121 has the following utilities electrical, plant water, plant sanitary, plant steam, natural gas, and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers

Trailer T121A

Trailer T121A is a 1960 Sq Ft. office trailer and was acquired in 1985 T121A has corrugated metal siding with corrugated metal skirting The entrances have wooden stairs leading to a wooded enclosure The interior is primarily a cubical layout, but has several hard-walled offices Interior walls are wallboard The ceiling is a drop ceiling with acoustical tiles and recessed lights The floor is primarily covered with carpet

Trailer T121A has the following utilities electrical, and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers

Building 122

Building 122 is an 8600 sq ft medical building for Occupational Health and was constructed in 1953 Building 122 is a single-story poured concrete building There have been several additions to the original structure In the 1970s the body counting rooms were expanded and an addition was built onto the south side of the building In the 1990s an administrative section was added to the north side of the structure The additions were constructed with concrete blocks and prefabricated concrete roof panels The body counting rooms have specially designed steel walls with lead, tin and zinc shielding to eliminate cosmic radiation. In addition, the X-ray room has lead shielding in the walls

Building 122 has the following utilities electrical, plant water, plant sanitary, plant steam, site waste process system (grouted in July 2002), and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers

Building 122S

Emergency Power Switchgear/Shredder is a 222 sq ft structure built in 1983. Building 122S is steel frame building with metal walls and roof, and is constructed on a concrete pad

Building 122S has the following utilities electrical and fire protection is provided by wall mounted fire extinguishers

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Trailer T124A

T124A is a 15,400 square-foot general office trailer and was acquired in 1991 This modular trailer is approximately 120-feet wide by 130-feet long T124A has corrugated metal siding with corrugated metal skirting. The entrances have wooden stairs leading to a wooded enclosure

The interior is primarily a cubical layout, but has several hard walled offices, conference rooms, and rest rooms. Interior walls are wallboard The ceiling is a drop ceiling with acoustical tiles and recessed lights The floor is primarily covered with carpet except in the bathrooms and dock entranceways, which are covered with vinyl tile

Trailer T124A has the following utilities electrical, plant water, plant sanitary, and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers.

Trailer T122A

Trailer T122A is a 320 sq ft Mobile Decontamination Trailer, acquired in 1997 T122A has sheet metal siding, skirting and roofing The interior is a water-resistant wallboard and the floor has a rubberized covering The trailer has process water storage tanks located under the trailer The trailer also has propane tanks under the trailer to fuel the hot water heater

Trailer T122A has the following utilities electrical, plant water, propane, and fire protection is provided by and wall mounted fire extinguishers

Building 127

Building 127 houses the emergency generator for Building 121 Building 127 is a 504 sq ft building constructed in 1973 Building 127 is a single story concrete block building, prefabricated concrete roof, constructed on a concrete pad

Building 127 has the following utilities electrical, and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers

Building 128

Building 128 is the vehicle shelter for the site security vehicles Building 128 is a 2448 sq ft. building constructed in 1980 This building is an non-insulated concrete block building with a prefabricated concrete panel roof constructed on a concrete pad

Building 128 has the following utilities electrical, and fire protection is provided by wall mounted fire extinguishers

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Historical Operations

Building 119

Originally, Building 119 housed the Fitness Center (on the north end of the building) and the site Alarm Maintenance Group (on the south end of the building) Approximately seven years ago, the site Alarm Maintenance Group moved out of the building and the Fitness Center was expanded to occupy the entire building With the exception of Room 111, which houses the site Lock and Key Organization

The site Alarm Maintenance group use sealed sources to test their equipment. There was no history of any sealed sources leaking and no evidence of any building contamination associated with this activity

Trailer T119B

Trailer T119B has historically been used as a general office trailer by site security personnel This trailer has no history of radiological or hazardous operations

119H Helicopter Pad

The 119H helicopter Pad was used to support emergency evacuation of personnel The pad has no history of radiological or hazardous operations The concrete pad on the east side of the 119H Helicopter Pad was the foundation for an old bus stop/shelter

Building 121

Building 121 was originally constructed as the site security building and contains the administrative offices, the armory, the Secondary Alarm Station (SAS) and site dispatch operations SAS operations use a large amount of electric security equipment This security equipment is regularly undated and frequently required minor building modifications for installation of new equipment Building 121 is also used to clean, repair, and inspects firearms Firearms cleaning was primarily performed in rooms 108 and 101 The firearms cleaning activities used small volumes of solvents and lubricants These solvents and lubricants are normally applied to a rag and then used to clean the firearms There has never been a reportable spill associated with the firearms cleaning activity Occasionally, during the route surveys of Building 121, very low levels of contamination tracked in on the shoes of security guards working inside the PAA was found This contamination was always cleaned-up at the time of detection.

A small natural gas powered incinerator was in operation on the south side of the building from 1953 until it was removed in the early 1980s The incinerator was used to incinerate classified documents

Trailer T121A

Trailer T121A has historically been used as a general administrative office trailer by several organizations such as site security In 1996, T121A was used by the Health Physics organization to inspect and service Health physics instruments Currently T121A only performs inspection and testing on health physics interments, which include hand probes and combination hand/foot probs Prior to receipt of health physics equipment by Trailer T121A, the equipment is surveyed and certified to be contamination free by the user Sources used to test these instruments are stored in cabinets in Room 01 Routine surveys indicate that there is no building contamination associated with this activity Hazardous material generated during this activity consisted mostly of spent batteries and disposal of instrument components See The Trailer T121A WSRIC for a more detailed explanation of the waste stream from Trailer 121A

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Building 122

Building 122 contains emergency medical services, personnel decontamination equipment, gamma counting operations, medical/infectious waste treatment, and administrative offices Major waste-generating processes in this building include X-ray development and medical/infectious waste generation The wastes include fixers, developers, decontamination water, and medical waste Spent fixers are collected in a satellite collection area. Developers are washed down the sanitary drain Decontamination water was released to a process waste system and sent to Building 374 for treatment In July 2002 the process waste drains in the building were grouted Medical/infectious wastes are segregated as low-level or non-radioactive wastes Non-radioactive medical wastes are placed in a vendor-supplied container for offsite disposal Low-level medical wastes are placed in an appropriate container after treatment to render them non-infectious

The body counting rooms and the x-ray room have lead shielding in the walls Sources are stored in room 128D There is no history of any sources leaking Room 109 is used to develop x-rays and the solution is collected in a satellite accumulation area in Room 109

Building 121 was also used to decontaminate injured site personnel The most notable event occurred in 1964 when the entryway and some of the support rooms were contaminated with low levels of Pu The contamination was the result of treating and decontaminating a contaminated worked from Building 776 The building was decontaminated using damp wiping and other abrasive techniques Some of the floor tiles in the effect areas were replaced and a new floor was installed in the original shower area

The cadaver table in room 119 and the new decontamination showers in Room 127A have a fixed contamination label on them

Building 122 was never connected to the original waste process system Process waste from Building 122 drained to an above ground tank (T1) located at the southeast corned of the building Process waste from Tank T1 was pumped to a truck and transported to 774 for treatment When the new waste transferred system was installed in the late 1970s a connection was made to the buildings process waste system Tank T1 was removed in the early 1980s

Trailer 122A

Trailer 122A is the Mobile Decontamination Trailer and was originally anticipated as type 2 facility It is anticipated that little or no facility contamination will be found in this trailer This trailer is used to decontaminate injured and potentially contaminated personnel T122A has several containers labeled radiological material for holding potentially contaminated PPE and decontamination waste Due to the use of water resistant and rubberized materials on the interior of this decontamination trailer, little facility contamination is expected during the RLCR process When the process waste tanks under the trailer are full, the wastewater was transferred to the process waste system using a pump located in Building 122 In July 2002 the process waste drains in Building 121 were grouted Process Waste from T121A will need to be trucked to Building 374 for treatment.

Building 122S

Building 122S houses the switchgrear equipment for the emergency generator and, in the past housed the shredder used to shred classified documents The shredder was operational from mid 1980s to the late 1980s The shredder has since been removed The area that housed the shredder is now used as a general storage area

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Trailer T124A

Trailer T124A has historically been used as a general office trailer and has housed such organizations as DOE, CDPH, Forrest service, Safe Sites management personnel and RFCSS management personnel Trailer T124A has never housed any radiological or hazardous operation

Building 127

Building 127is the emergency generator for Buildings 121 and 122 This building has always been an emergency generator. Tank 288 is the old underground fuel tank for Building 127 Tank 288 has been closed and is foamed in place Building 127 has never housed any radiological or hazardous operation Maintenance waste includes batteries, used oil and ethylene glycol that are disposed of by Building 334 maintenance personnel

Building 128

Building 128 is a vehicle shelter for plant protection vehicles and stores security supplies such as radios, belts, and boots There is no history of any radiological or hazardous operations No vehicle maintenance was performed in Building 128

Current Operational Status

Building 119, T119B, 119H, 121, T121A 122, T122A, 122S, T124A, 127, and 128 are all operational

Contaminants of Concern

Asbestos

Describe any potential, likely, or known sources of Asbestos

Buildings 121, 122, 122S and 127 are posted as potentially containing asbestos The Industrial Hygiene Group (IH) has collected some asbestos data on Buildings 121 and 122 Contact IH for a copy of this information

Beryllium (Be)

Describe any potential, likely, or known Be production or storage locations

None of the buildings addressed in this HSA are on the List of known Be Areas

Summarize any recent Be sampling results

There have been no recent Be samples collected on any of these facilities

Lead

Describe any potential, likely, or known sources of Lead (e.g , paint, shielding, etc)

Based on the age of some of the facilities addressed in this HSA, lead in paint may be a concern No processes containing lead were conducted in these facilities The body counting rooms and the x-ray room in Building 121 have lead shielding in the walls

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RCRA/CERCLA Constituents

Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e g , chemical storage, waste storage, and processes)

See the Historical Operation Section above for facilities with operations that evolve RCRA/CERCLA constituents

Describe any potential, likely, or known spill locations (and sources, if any)

None of the facilities in this HSA have had any RCRA/CERCLA spills

Describe methods in which spills were mitigated, if any

None of the facilities in this HSA have had any RCRA/CERCLA spills

PCBs

Describe any potential, likely, or known sources of PCBs (e g , light ballasts, paints, equipment, etc)

No PCB containing process where housed in any of the facilities addressed in this HSA Based on the age of construction of some of these facilities, PCBs in paint may be an issue

Describe any potential, likely, or known spill locations (and sources, if any)

No PCB spills occurred in any of the facilities addressed in this HSA

Describe methods in which spills were mitigated, if any

No PCB spills occurred in any of the facilities addressed in this HSA

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Radiological Contaminants

Describe any potential, likely, or known radiological production or storage locations

None of the Buildings in this HSA are radiological posted However, the entry and several of the supporting rooms in Building 121 where contaminated during the incident involving a Building 776 worked in 1964 and were cleaned to the standards of the day The shower and cadaver table in Building 122 have fixed contamination labels See the historical operation section above for more details on other minor radiological issues related to Building 121 and 122 Several of the facilities addressed in this HSA have stored sealed sources, but none have had a history of leaking.

Describe any potential, likely, or known spill locations (e g , known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc)

Except as noted in the historical operations section above no radiological material has been stored or handled in any of the facilities addressed in this HSA

Describe methods in which spills were mitigated, f any

See Historical operation section above for details related to the 1964 contamination of Building 122

Describe any potential, likely, or known isotopes of concern (e g , weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc)

Isotopes of concern include uranium and plutonium

Describe any potential, likely, or known external facility contamination (e g , stack release points, unfiltered ventilation, facility's physical location to known site releases, etc)

See section below for information on IHSSs PACs, and UBCs

Environmental Restoration Concerns

Describe any ER concerns that could affect facility characterization (e g , IHSSs, PACs, UBCs)

Building 119 is located near the following PAC

1) PAC 100-612 " Battery Solution spill", NFA approved in 1992

Building 121 is located next to the following PAC

1) PAC 100-609 "Building 121 Security Incinerator", Active

Building 121 has a partial UBC under the southern portion of the building

The remainder of the facilities addressed in this HSA are not associated with any IHSSs, PACs, or UBCs

Additional Information

Describe any additional information that may be useful during facility characterization (e g , contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc)

None

References

Provide all sources of information utilized to gather data for facility history (e.g , documents, files, interviews)

Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases The WSRIC for those buildings with a WSRIC In addition, a facility walkdown and interviews were performed

Waste Volume Estimates and Material Types

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
Building 119	5000	0	2200	2900	2500	TBD	N/A
Trailer T119B	0	3500	1500	3000	4500	TBD	N/A
Building 119H	0	0	0	0	0	TBD	Asphalt - 1200
Building 121	7000	0	1000	0	1600	TBD	N/A
Trailer T121A	0	700	700	750	800	TBD	N/A
Building 122	8200	0	1100	0	2500	TBD	N/A
Building 122S	100	0	100	100	0	TBD	N/A
Trailer T124A	0	3500	1500	3000	4500	TBD	N/A
Building 127	700	0	50	0	0	TBD	N/A
Building 128	2500	0	200	0	0	TBD	N/A
Trailer T122A	0	0	100	250	200	TBD	N/A

Further Actions

Recommend any further actions, if any (e g , characterization, decontamination, special handling, etc)

Begin the RLC/PDS process

Note

This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations SMEs should evaluate and/or verify all information during the RLC/PDS process SMEs may need to review additional documentation and perform additional interviews Information contained in this HSA only represents a "snapshot" in time Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report However, this report will not be amended, and the newer data will take precedence over the data in this report. Newer Data will appear in the RLCR/PDSR.

Prepared By: Doug Bryant / Doug Bryant / August 2002
Name Signature Date

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D&D RISS Facility Characterization
Historical Site Assessment Report
August, 2002 Rev. 2

Facility ID: Building 441 and Trailer T441A,
Anticipated Facility Type (1, 2, or 3) Building 441 is an anticipated Type 2 facility Trailer T441A is an anticipated Type 1 facility

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with
D&D Characterization Protocol, RFETS MAN-077-DDCP, latest version, and
Facility Disposition Program Manual, RFETS MAN-076-FDPM, latest version

Physical Description

Building 441

Building 441is a 17,800-sq ft single story concrete structure built in 1953 Building 441 was originally constructed as a laboratory to support of the depleted uranium and beryllium operations, but was striped out and converted to an administration building in 1966 An addition was added to the southern section of the structure This addition was built in 1966 at the same time the building was converted to administrative use and never operated as a laboratory The building currently measures approximately 200-ft long by 96-ft wide by 15-ft high and has a dock area in the southeast corner of the building The building is currently configured with a hard walled office and cubical layout Building 441 had sprayed on insulation applied to the northern exterior of the building in about 1978

Building 441 is serviced by the following utilities, water, sanitary, electric, process waste line (grouted), and steam heat Fire protection is provided by an overhead sprinkler system and wall-mounted fire extinguishers The 1966 addition, which is primarily used for record storage has a non-hazardous inert gas extinguisher system instead of an overhead sprinkler system

Trailer T441A

Trailer T441A is a 2080 sq ft office trailer that was constructed in 1967 Trailer T441A measures 45-ft long by 45-ft wide by 15-ft high and is constructed of corrugated metal siding and skirting The trailer is configured with a hard walled office and cubical layout

Trailer 441A is serviced by the following utilities, water, sanitary, electric, and an overhead sprinkler system and wall-mounted fire extinguishers provide fire protection

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Historical Operations

Building 441

Building 441 was originally constructed as a general analytical laboratory to support the depleted uranium, beryllium operations and general site chemical analysis In 1966 the building was renovated and converted to administrative offices During this renovation an addition was add to the south side of the structure This 1966 addition was constructed for administrative use and was never used in connection with the original Laboratory

The north west section of the original construction was primarily office space with the central and southern portion of the original structure housing laboratory equipment, vapor hoods and laboratory tables The original Building 441 laboratory also had a few metal working machines to handle special needs After the 1966 renovation the entire building was converted to administrative office and cubical space

During the 1966 renovation the building went through an extensive strip-out The strip-out included removal of the laboratory equipment, laboratory benches, hoods, as well as, most of the floor tile, suspended ceiling, exhaust system and the process drains and trenches were either plugged or grouted The walls and partitions were removed in some areas and installed in others

The original laboratory provided general laboratory analytical support of depleted uranium and beryllium analysis for the 400 and 800 areas Process sinks where located throughout the laboratory area and were diverted to two interconnected underground concrete storage tanks T2 and T3 (T-3 was connected to a temporary holding , Tank-076 that has been drained) located south of Building 441 These tanks are currently called Building 429 waste pit and received waste from the Building 441 laboratories and Buildings 122 and 123 These tanks were isolated from Building 441 and partially closed during the construction of the 1966 addition, which was built over the northern 6-feet of the tanks Tanks T2 and T3 continued to receive waste from Building 122 and 123 until the early 1980s These tanks were foamed-in-place in 1996 in accordance with the "Proposed Action Memorandum For Contaminant Stabilization of underground Storage Tanks" dated April 1996 Tanks T2 and T3 are not part of this HSA, but are mentioned because of their historical connection and close proximity to Building 441 Additional information on Tanks T2 and T3 can be found in IHSS 400-122 and in the "Proposed Action Memorandum For Contaminant Stabilization of underground Storage Tanks"

Currently Building 441 houses the site classification office, which stores a large number of classified site records and also operates microfilming equipment Building 441 also house several people from the site transportation and site security departments In the past, Building 441 has housed the purchasing department and engineering support group

Trailer T441A

Trailer T441A has historically been an office trailer and has housed such operations as training and engineering support Engineering support currently has the only 2 people still located in the trailer Engineering support tests prototype detectors and develops operating procedures for various reconfigured SAMs, CAMs, and other detectors Much of the used equipment reconfigured was conditional released from Building 566 for transportation on site The testing of prototype and reconfigured detectors frequently use radiological sources, which are stored in a cabinet in Room 11

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Current Operational Status

Building 441 is currently operational as an administrative building, which houses the classification office and also houses several people from the transportation department Trailer T441A is currently houses 2 engineering support personnel

Contaminants of Concern

Asbestos

Describe any potential, likely, or known sources of Asbestos

Building 441 is posted as potentially containing asbestos TrailerT441A has no asbestos posting The IH group in Trailer T130B has an Asbestos Inspection Plan And Operations Maintenance Plan for Building 441 dated 1996, which summarized some general historical asbestos data. The Trailer Asbestos Management Program Baseline, dated 1994, summarized some general T441A historical asbestos data

Beryllium (Be)

Describe any potential, likely, or known Be production or storage locations

Building 441 has several rooms on the list of known Be areas from its history as a Laboratory prior to 1966 These rooms include 106,106A, 106C, 106E, 106G, 112 116, 117, 118, 119, and 135 Trailer T441A is not on the list of known Be areas and had no known Be operation However in November 2001 some Be samples where taken on some used equipment in room 12 The results were positive on the equipment and the shelves the equipment was stored on Additional Be sampling has been performed to evaluate the remainder of the Trailer All additional samples came back negative The Be posting will be move back to include only the shelves in room 12

Summarize any recent Be sampling results

No recent Be samples have been collected on Building 441 T441A has had recent Be samples with positive results on some equipment stored in room 12 Addition sample results are pending Be sample results will be summarized in the RLCR

Lead

Describe any potential, likely, or known sources of Lead (e g , paint, shielding, etc)

Building 441 and Trailer T441A both have numerous painted surfaces that date back to the original construction Lead shielding was likely used in the original Building 441 laboratories, but the lead shielding would have been removed during the 1966 strip-out Trailer T441A currently has several lead bricks that are used during calibration of the prototype detector tested in Rooms 11 and 12

Building 441 and Trailer T441A have a limited number of electrical panels that may contain lead. See the section below for RCRA/CERCLA constituents for lead in waste steam references related to Building 441 and Trailer T441A

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RCRA/CERCLA Constituents

Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e g , chemical storage, waste storage, and processes)

Building 441 was a depleted uranium and beryllium laboratory from 1953 to 1966 when it was stripped out and converted to an administrative building The 1966 addition was never used in conjunction with the laboratory Laboratory quantities of RCRA/CERCLA constituents were used in Building 441. These RCRA/CERCLA constituents were primarily acids, bases and various organic solvents The laboratory area had several small volume mercury spills that were cleaned up using elemental sulfur Early NDA analysis performed in Building 441 required film processing, therefore photo developing chemicals (silver) were likely discharged to the process waste system

Laboratory waste was directed from process waste sinks in the vapor hoods and the laboratory benches to Tanks T2 and T3 located south of the building The process waste drains and floor trenches were plugged or grouted during the 1966 strip-out. Tanks T2 and T3 also collected process waste from Buildings 122 and 123 Tanks T2 and T3 were isolated from Building 441 during its conversion to an administrative building The tanks continued to receive waste from Buildings 122 and 123 until 1982 The Tanks were foamed-in-place in 1996 Several releases from Tanks T2 and T3 are documented in IHSS 400-0122 Building 441 is also a UBC

Building 441 has a WSRIC that primarily addresses chemicals from the building microfilming processes These chemicals are non-hazardous and are disposed of down the sanitary sewer drains

Trailer T441A has no history of RCRA/CERLA operations

Describe any potential, likely, or known spill locations (and sources, if any)

Small volume leaks likely occurred in the original laboratory, but these spill were likely clean up prior to or during the strip-out of the laboratory equipment, floors tiles, suspended ceiling and the ventilation system in 1966. Tanks T2 and T3 leaks are documented in IHSS 400-122

Describe methods in which spills were mitigated, if any

Spills were commonly cleaned by swiping solids and using an adsorbent for liquids

PCBs

Describe any potential, likely, or known sources of PCBs (e g , light ballasts, paints, equipment, etc)

Building 441 and Trailer T441A housed no PCB containing processes Due to the age of these two buildings PCBs in the paint, light ballasts, and equipment may be a concern

Describe any potential, likely, or known spill locations (and sources, if any)

No known PCB spills occurred in Building 441 or Trailer T441A

Describe methods in which spills were mitigated, if any

No known PCB spills occurred in Building 441 or Trailer T441A

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Radiological Contaminants

Describe any potential, likely, or known radiological production or storage locations

Building 441 was a depleted uranium and beryllium laboratory from 1953 to 1966 when it was stripped out and converted to an administrative building The 1966 addition was never used in conjunction with the laboratory The entrances to Building 441 are not radiologicaly posted and the building has an annual radiological survey, which does not identify any radiological contamination The building does have a single RMS located in a cabinet in Room 144 This RMA is made up of 5 boxes of classified documents, which were found to have trace amounts of radiological contamination

The laboratory waste was directed from process waste sinks, in the vapor hoods and the laboratory benches, to Tanks T2 and T3 located south of the building The process waste drains and trenches were plugged or grouted during the 1966 strip-out Tanks T2 and T3 also collected process waste from Buildings 122 and 123, and were isolated from Building 441 during its 1966 renovation The tanks continued to collect waste from buildings 122 and 123 until 1982 These Tanks were foamed in-place in 1996 Releases from Tanks T-2 and T-3 are documented in IHSS 400-0122 and Building 441 is a UBC

Trailer T441A has a RMA established to store sealed sources used to test the prototype and reconfigured detectors The RMA is located in a cabinet in Room 11 The sources stored in the RMA have no history of leaking Most of the detectors stored in T441A were only conditionally release from Building 566

Describe any potential, likely, or known spill locations (e g , known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc)

Small volume leaks likely occurred in the laboratory prior to 1966, but these spills and residual contamination was likely clean prior to or during the strip-out of the laboratory equipment, floors tiles, suspended ceiling and the ventilation system during the 1966 renovation Tanks T-2 and T-3 leaks are documented in IHSS 400-122 Sealed source may have been stored in the laboratory prior to 1966, but these sources would have been removed during building strip-out Process waste drains and floor trenches were plugged or grouted during the 1966 renovation to an administrative building

Describe methods in which spills were mitigated, if any

Spills were commonly cleaned by swiping solids and using an adsorbent for liquids

Describe any potential, likely, or known isotopes of concern (e g , weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc)

The Isotope of concern was primarily depleted uranium There were no known mixed fission products used in any of the facilities addressed in the HSA Trailer T441A has a single Sr-90 sealed source stored in Room 11 and the source has no history of leaking The remaining facilities addressed in this HSA have not handled any known pure beta emitters However, natural thorium samples were analyzed, on occasion, for special projects

Describe any potential, likely, or known external facility contamination (e g , stack release points, unfiltered ventilation, facility's physical location to known site releases, etc)

See section below for information on IHSSs PACs, and UBCs

Environmental Restoration Concerns
Describe any ER concerns that could affect facility characterization (e g , IHSSs, PACs, UBCs)

Building 441 is a UBC and is associated with IHSS 400-122 "Underground Concrete Tanks" Building 441 is also generally mentioned in IHSS 400-157 1 "Radioactive Site north Area" Trailer T441A is not mentioned in any IHSS, PAC, or UBC

Additional Information
Describe any additional information that may be useful during facility characterization (e g , contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc)

Tanks T2 and T3 were foamed in-place in 1996 in accordance with the "Proposed Action Memorandum For Contaminant Stabilization of underground Storage Tanks" dated April 1996

References
Provide all sources of information utilized to gather data for facility history (e g , documents, files, interviews)

Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases Building 441 has a WSRICs In addition, a facility walkdown and interviews were performed

Waste Volume Estimates and Material Types

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste
Building 441	66,500		2100	0	2900	TBD	Built-up roofing 5900 cu ft
Trailer T441A	0	500	500	600	500	TBD	None

Further Actions
Recommend any further actions, if any (e g , characterization, decontamination, special handling, etc)

Begin the RLC/PDS process

Note:
This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations SMEs should evaluate and/or verify all information during the RLC/PDS process SMEs may need to review additional documentation and perform additional interviews Information contained in this HSA only represents a "snapshot" in time Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report However, this report will not be amended, and the newer data will take precedence over the data in the report Newer Data will appear in the RLCR/PDSR.

Prepared By: Doug Bryant / /s/ / March 2001
Name Signature Date

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ATTACHMENT C

Radiological Data Summaries and Survey Maps

SURVEY UNIT T121A-A-001
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: T121A (Interior & Exterior)

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Total Surface Activity Measurements

	20 Number Required	21 Number Obtained	
MIN	-9 8		dpm/100 cm^2
MAX	56 6		dpm/100 cm^2
MEAN	13 7		dpm/100 cm^2
STD DEV	20 8		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Removable Activity Measurements

	20 Number Required	20 Number Obtained	
MIN	-0 6		dpm/100 cm^2
MAX	3 9		dpm/100 cm^2
MEAN	0 6		dpm/100 cm^2
STD DEV	1 4		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

SURVEY UNIT T121A-A-001
TSA - DATA SUMMARY

Manufacturer	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech
Model	DP-6	DP-6	DP-6	DP-6	DP-6
Instrument ID#	1	2	3	4	9
Serial #	3094	3094	2352	2344	3094
Cal Due Date	1/25/03	1/25/03	2/7/03	2/7/03	1/25/03
Analysis Date.	10/14/02	10/14/02	10/14/02	10/14/02	10/15/02
Alpha Eff (c/d)	0 222	0 222	0 224	0 223	0 222
Alpha Bkgd (cpm)	1 0	1 0	0 0	0 0	2 7
Sample Time (min)	1 5	1 5	1 5	1 5	1 5
LAB Time (min)	1 5	1 5	1 5	1 5	1 5
MDC (dpm/100cm^2)	48 0	48 0	48 0	48 0	48 0

Sample Location Number	Instrument ID#·	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
1	3	4 0	17 9	5 3	23 7	-0 9
2	2	48 0	216 2	5 3	23 9	0 0
3	4	2 0	9 0	4	17 9	-9 8
4	2	32 7	147 3	1.3	5 9	0 0
5	4	4 7	21 1	0 7	3 1	2 3
6	3	14 7	65 6	6	26 8	46 9
7	3	7 3	32 6	4	17 9	13 8
8	3	8 0	35 7	5 3	23 7	17 0
9	4	12 7	57 0	8	35 9	38 2
10	2	30 7	138 3	5 3	23 9	0 0
11	3	3 3	14 7	4	17 9	-4 0
12	4	16 8	75 3	2	9 0	56 6
13	3	14 0	62 5	6	26 8	43 7
14	3	12 7	56 7	4	17 9	37 9
15	4	13 3	59 6	3 3	14 8	40 9
16	4	6 0	26 9	2	9 0	8 2
17	4	4 7	21 1	6	26 9	2 3
18	4	4 0	17 9	0	0 0	-0 8
19	3	3 3	14 7	2 7	12 1	-4 0
20	4	4 0	17 9	6 7	30 0	-0 8
21	9	48 6	218 9	6	27 0	0 0
					18 8	Sample LAB Average
					MIN	-9 8
					MAX	56 6
					MEAN	13 7
					SD	20 8
					Transuranic DCGL$_W$	100

1 Average LAB used to subtract from Gross Sample Activity

QC Measurements

18 QC	3	4	17 9	2 7	12 1	-1 6
12 QC	3	22 7	101 3	6	26 8	81 9
					19 4	QC LAB Average
					MIN	-1 6
					MAX	81 9
					MEAN	40 2
					Transuranic DCGL$_W$	100

1 Average QC LAB used to subtract from Gross Sample Activity

2 The initial Sample Net Activity for locations 2 4 10 and 21 were 197 5 128 5 119 5 and 200 2 dpm/100cm^2 respectively

Coupon samples were collected from locations 2, 4 and 21 and analyzed using the Canberra ISOCS system

Location 10 is of the same material (exposed metal) and proximity as roof locations 2 and 4 therefore location 10 was not sampled sample results from locations 2 & 4 represent location 10 activity No transuranic isotopes were detected Exposed metal sample activity was determined to be from uranium and naturally occuring isotopes The Sample Net Activity for these locations is below the uranium DCGL$_W$ limits (5 000 dpm/100cm2)

All survey results are less than the applicable DCGLs therefore no further investigation is required.

On this basis the transuranic value for locations 2 4 10 and 21 is reported as zero (0) net activity in the TSA Data Summary

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SURVEY UNIT T121A-A-001
RSC - DATA SUMMARY

Manufacturer	Eberline	Eberline	Eberline	Eberline
Model	SAC-4	SAC-4	SAC-4	SAC-4
Instrument ID#	5	6	7	8
Serial #	959	966	963	952
Cal Due Date	1/18/03	11/6/02	1/3/03	1/31/03
Analysis Date	10/15/02	10/15/02	10/15/02	10/15/02
Alpha Eff. (c/d)	0 33	0 33	0 33	0.33
Alpha Bkgd (cpm)	0 2	0 0	0 1	0 0
Sample Time (min)	2	2	2	2
Bkgd Time (min)	10	10	10	10
MDC (dpm/100cm^2)	9 0	9 0	9 0	9.0

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	5	0 0	-0 6
2	6	2 0	3 0
3	7	0 0	-0 3
4	8	0 0	0 0
5	5	1 0	0 9
6	6	1 0	1 5
7	7	0 0	-0 3
8	8	1 0	1 5
9	5	0 0	-0 6
10	6	2 0	3 0
11	7	0 0	-0 3
12	8	0 0	0 0
13	5	0 0	-0 6
14	6	0 0	0 0
15	7	0 0	-0 3
16	8	0 0	0 0
17	5	3 0	3 9
18	6	0 0	0 0
19	7	1 0	1 2
20	8	0 0	0 0
		MIN	-0 6
		MAX	3 9
		MEAN	0 6
		SD	1 4
		Transuranic DCGL$_W$	20

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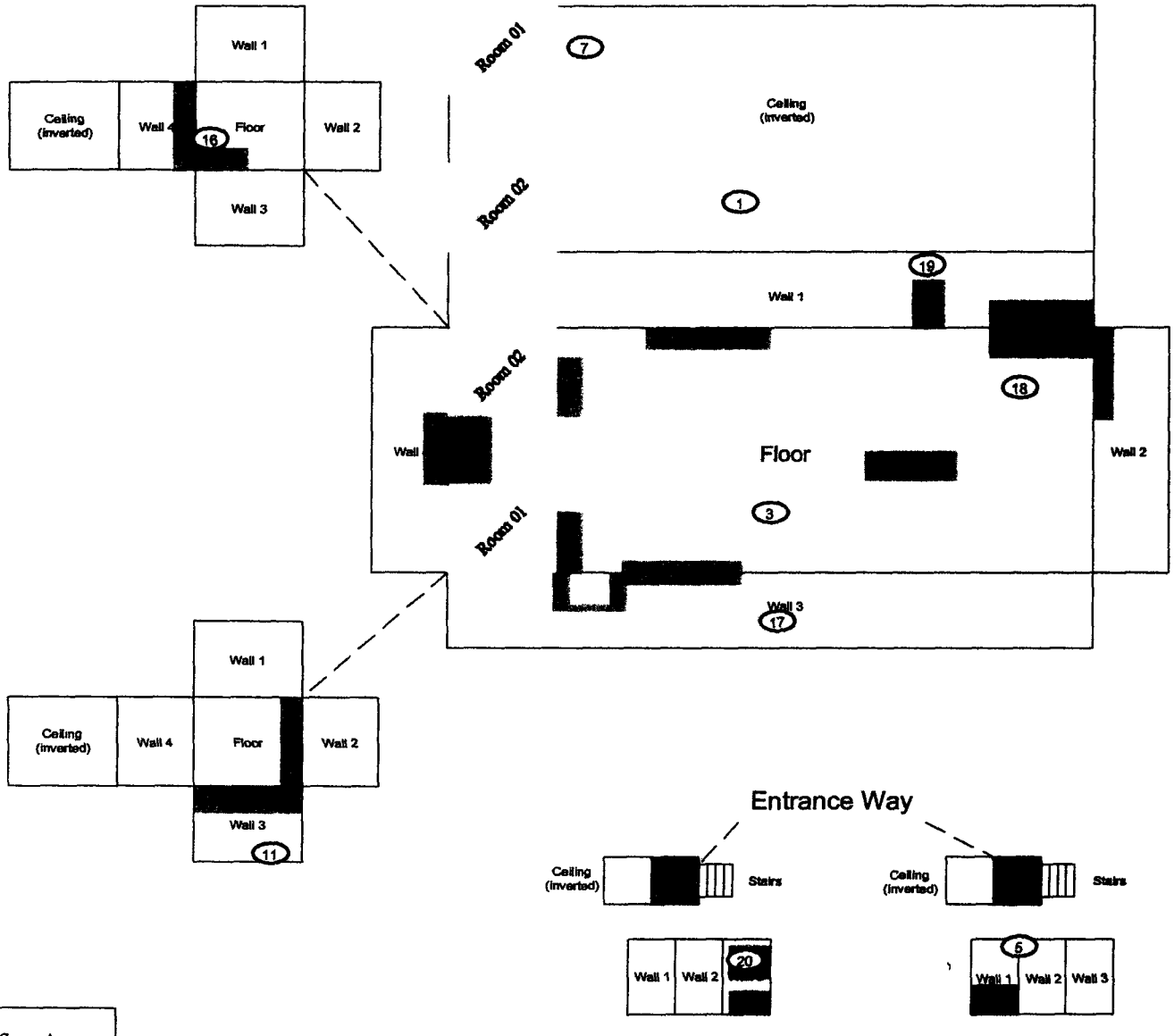
PRE-DEMOLITION SURVEY FOR T121A

Survey Area 5 **Survey Unit T121A-A-001** **Classification 3**
Building T121A
Survey Unit Description Interior & Exterior of Building
Total Area 973 sq m **Total Roof Area 177 sq m**
Total Floor Area 171 sq m

T121A Interior



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Location

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq = 1 sq m

Scan Survey Information
Survey Instrument ID #(s) 1, 2, 9
RCT ID #(s) 1, 2, 9

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Prepared by GIS Dept 303-966 7707 Prepared for

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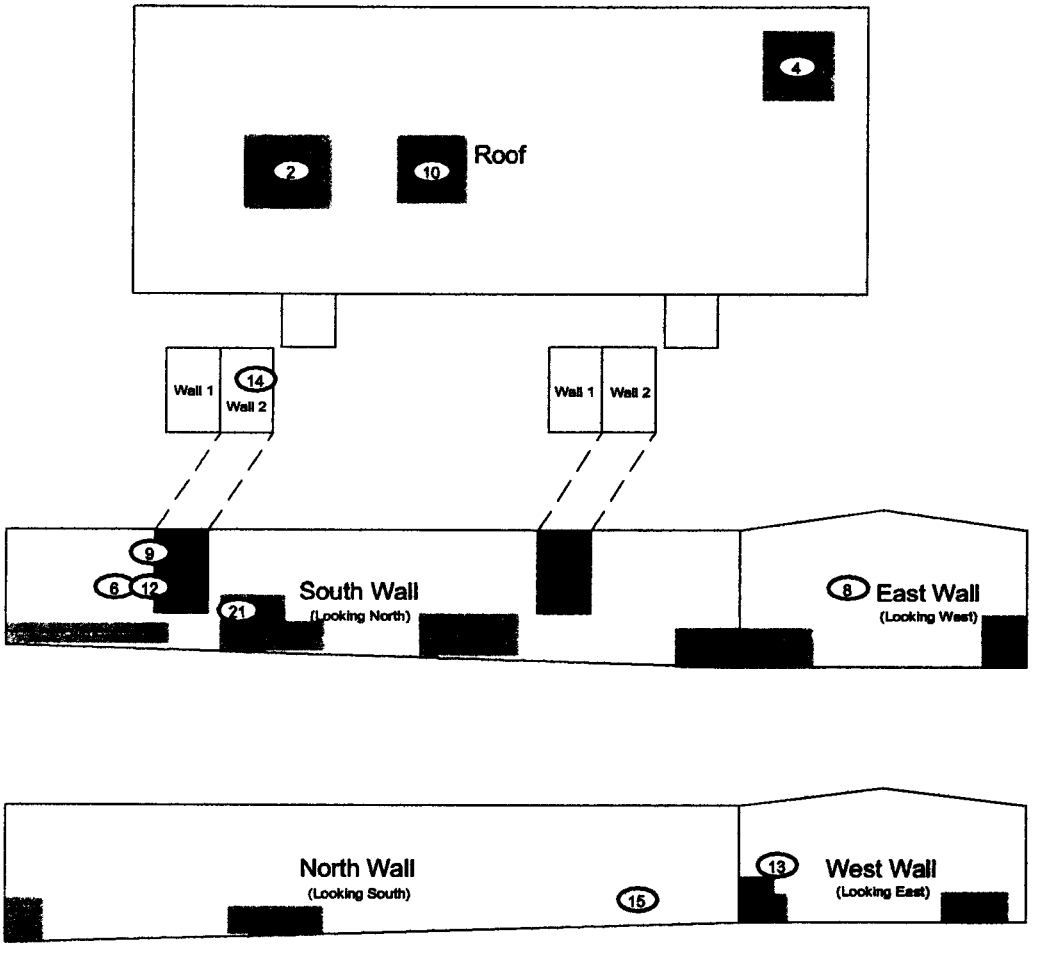
THE ART OF TECHNOLOGY

MAP ID 02-0888/T121A-IN-SC Oct 22, 2002

PRE-DEMOLITION SURVEY FOR T121A

Survey Area 5 **Survey Unit. T121A-A-001** **Classification 3**
Building T121A
Survey Unit Description Interior & Exterior of Building
Total Area 973 sq m **Total Roof Area 177 sq m**
Total Floor Area 171 sq m

T121A Exterior



Scan Area

SURVEY MAP LEGEND
- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq m

Scan Survey Information
Survey Instrument ID #(s) 1, 2, 9
RCT ID #(s) 1, 2, 9

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by GIS Dept 303-966 7707

DynCorp
THE ART OF TECHNOLOGY

Prepared for [redacted]

MAP ID. 02-0888/T121A-EX-SC Oct 22, 2002

****
***** GAMMA SPECTRUM ANALYSIS *****
** Canberra Mobile Laboratory Services **
****

Report Generated On : 12/5/2002 10:08:28 AM

RIN Number : 03S0013
Analytical Batch ID : 0212034453
Line Item Code : RC10B019

Metal Coupon Samples from T441A and T121A composite Location # 30

Filename: C:\CMLS\Miscellaneous Data\High Ra-226 State\24 h

Sample Number : 03S0013-005.001
Lab Sample Number : CMLS-1975
Sample Receipt Date : 12/3/2002
Sample Volume Received : 1.53E+001 grams

Result Identifier : N/A

Peak Locate Threshold : 2.00
Peak Locate Range (in channels) : 100 - 8192
Peak Area Range (in channels) : 100 - 8192
Identification Energy Tolerance : 1.000 keV

COPY

Sample (Final Aliquot Size) : 1.530E+001 grams
Sample Quantity Error : 0.000E+000
Systematic Error Applied : 0.000E+000

Sample Taken On : 10/15/2002 12:55:00 PM
Acquisition Started : 12/3/2002 4.36:46 PM

Count Time : 86400.0 seconds = 24 hours
Real Time : 86407.3 seconds
Dead Time : 0.01 %

Energy Calibration Used Done On 10/4/02
Energy = -0.113 + 0.250*ch + -1.63E-007*ch^2 + 2.03E-011*ch^3

Corrections Applied
None

Efficiency Calibration Used Done On : 12/4/02
Efficiency Geometry ID 03S0013-006.001

Analyzed By: [signature] Date: 12-5-02

Reviewed By Daniel Remington Date: 12-5-2002

****
***** Sample and QC Sample Results Summary *****
****

Site Sample ID : 03S0013-005 001

Analytical Batch ID . 0212034453

Sample Type (Result Identifier). OBJ

Lab Sample Number : \CMLS-1975

Geometry ID : 03S0013-006.001

Filename: C:\CMLS\Miscellaneous Data\High Ra-226 State\24 h

Detector Name: BEGE

MDA = Curie method as specified in Genie-2000 Customization Tools Manual Appendix B; Basic Algorithms.

Analyte	Activity (pCi/grams)	2-Sigma Uncertainty (pCi/grams)	MDA (pCi/grams)
K-40	2.47E+000	9.20E-001	1.47E+000
CS-137	0.00E+000	0.00E+000	8.11E-002
TL-208	4 08E-002	2.03E-002	5.37E-002
PO-210 1	5 85E+003	4.57E+003	7.57E+003
BI-212	0.00E+000	0.00E+000	1 22E+000
PB-212	7.64E-002	3.79E-002	6 20E-002
BI-214	6 51E-002	3.85E-002	1.05E-001
PB-214	6.72E-002	2.81E-002	7.91E-002
RA-226	0.00E+000	0.00E+000	4 79E-001
AC-228	0.00E+000	0.00E+000	3.00E-001
TH-230	0.00E+000	0.00E+000	3.97E+000
Th-231	0 00E+000	0.00E+000	1.53E-001
PA-234	0 00E+000	0.00E+000	5.89E-002
PA-234M	0.00E+000	0.00E+000	7.84E+000
U-235	7 57E-002	4 64E-002	2 96E-002
U238/234	4.14E-001	3.20E-001	2.27E-001
AM-241	0.00E+000	0.00E+000	3.27E-002

1 - The 803 keV peak, which can be attributed to Po-210, was detected in the spectra This peak may be the result of the interaction of Pb-206(n,nÆ) which also produces a prompt gamma at 803 keV.

SURVEY UNIT T441A-A-001
RADIOLOGICAL DATA SUMMARY - PDS

Survey Unit Description: T441A (Interior & Exterior)

40

Total Surface Activity Measurements

	30 Number Required	32 Number Obtained	
MIN	-11 3		dpm/100 cm^2
MAX	73 2		dpm/100 cm^2
MEAN	14 9		dpm/100 cm^2
STD DEV	19 6		dpm/100 cm^2
TRANSURANIC DCGL$_W$	100		dpm/100 cm^2

Removable Activity Measurements

	30 Number Required	32 Number Obtained	
MIN	-0 9		dpm/100 cm^2
MAX	4 2		dpm/100 cm^2
MEAN	0 6		dpm/100 cm^2
STD DEV	1 4		dpm/100 cm^2
TRANSURANIC DCGL$_W$	20		dpm/100 cm^2

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SURVEY UNIT T441A-A-001
TSA - DATA SUMMARY

Manufacturer	NE Tech	NE Tech	NE Tech	NE Tech
Model	DP-6	DP-6	DP-6	DP-6
Instrument ID#	1	2	3	4
Serial #	1271	1261	3114	3094
Cal Due Date	3/25/03	4/5/03	3/5/03	1/25/03
Analysis Date:	10/9/02	10/9/02	10/9/02	10/10/02
Alpha Eff. (e/d):	0.216	0.206	0.222	0.222
Alpha Bkgd (cpm)	1.3	0.0	0 7	3.3
Sample Time (min)	1 5	1.5	1.5	1.5
LAB Time (min)	1 5	1 5	1 5	1 5
MDC (dpm/100cm^2)	48 0	48 0	48 0	48 0

Sample Location Number	Instrument ID#	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2)[1,2]
1	4	12	54 1	4.7	21.2	34 0
2	2	3.3	16.0	2.7	13 1	-4 1
3	2	7.3	35 4	4 7	22.8	15 4
4	2	13.3	64 6	6	29 1	44 5
5	2	5.3	25 7	6.7	32.5	5 7
6	1	4	18 5	5.3	24.5	1 6
7	1	4	18.5	1.3	6 0	1 6
8	1	6	27 8	4	18 5	7 7
9	4	16.7	75 2	4	18 0	55 2
10	2	10	48 5	7.3	35 4	28 5
11	2	5.3	25 7	6	29 1	5 7
12	3	8 1	36 5	3.3	14 9	16 4
13	4	20 7	93 2	6	27 0	73 2
14	2	11.3	54 9	6	29 1	34 8
15	1	3.3	15 3	2	9.3	-4 8
16	2	2.7	13 1	0	0 0	7 0
17	1	6	27 8	2.7	12.5	7 7
18	2	4	19 4	2.7	13 1	-0 7
19	2	6	29 1	1.3	6.3	9 1
20	1	1 9	8 8	2	9.3	11.3
21	1	6	27 8	2	9.3	7 7
22	1	2	9.3	6	27 8	-10 8
23	3	8.7	39 2	8	36.0	19 1
24	2	10 7	51 9	4 7	22.8	31 9
25	2	10	48 5	6	29 1	28 5
26	3	10	45 0	4	18 0	25 0
27	3	10 7	48 2	4 7	21 2	28 1
28	3	6 7	30 2	6	27 0	10 1
29	2	8 7	42.2	5.3	25 7	22.2
30	4	34	153 2	4	18 0	0 0
16 (under carpet)	2	5.3	25 7	3.3	16 0	5 7
19 (under carpet)	2	4 7	22.8	4	19 4	2.7
					20 1	Sample LAB Average
					MIN	11.3
					MAX	73 2
					MEAN	14 9
					SD	19 6
					Transuranic DCGL$_w$	100

1 Average LAB used to subtract from Gross Sample Activity

QC Measurements

6 QC	1	12	55 6	1.3	6.0	42.8
11 QC	2	10 7	51 9	4	19 4	39.2
					12.7	QC LAB Average
					MIN	39 2
					MAX	42.8
					MEAN	41 0
					Transuranic DCGL$_w$	100

1 Average QC LAB used to subtract from Gross Sample Activity

2 The initial Sample Net Activity for location 30 was 133 1 dpm/100cm^2
A coupon sample was collected from location 30 and analyzed using the Canberra ISOCS system. No transuranic isotopes were detected. Exposed metal sample activity was determined to be from uranium and naturally occuring isotopes
The Sample Net Activity for this location is below the uranium DCGL$_w$ limits (5000 dpm/100cm2)
All survey results are less than the applicable DCGLs, therefore no further investigation is required
On this basis the transuranic value for location 30 is reported as zero (0) net activity in the TSA Data Summary

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SURVEY UNIT T441A-A-001
RSC - DATA SUMMARY

Manufacturer	Eberline	Eberline	Eberline	Eberline
Model	SAC-4	SAC-4	SAC-4	SAC-4
Instrument ID#	9	10	11	12
Serial #	959	966	963	952
Cal Due Date	1/18/03	11/6/02	1/3/03	1/31/03
Analysis Date	10/10/02	10/10/02	10/10/02	10/10/02
Alpha Eff (c/d)	0 33	0 33	0 33	0.33
Alpha Bkgd (cpm)	0 2	0 3	0 1	0 0
Sample Time (min)	2	2	2	2
Bkgd Time (min)	10	10	10	10
MDC (dpm/100cm^2)	9 0	9 0	9 0	9 0

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm^2)
1	9	1 0	0 9
2	10	1 0	0 6
3	11	3 0	4 2
4	12	0 0	0 0
5	9	0 0	-0 6
6	10	0 0	-0 9
7	11	1 0	1 2
8	12	1 0	1 5
9	9	0 0	-0 6
10	10	1 0	0 6
11	11	1 0	1 2
12	12	0 0	0 0
13	9	3 0	3 9
14	10	0 0	-0 9
15	11	0 0	-0 3
16	12	0 0	0 0
17	10	0 0	-0 9
18	11	1 0	1 2
19	12	1 0	1 5
20	10	0 0	-0 9
21	11	2 0	2 7
22	12	0 0	0 0
23	9	1 0	0 9
24	10	0 0	-0 9
25	11	0 0	-0 3
26	12	0 0	0 0
27	9	0 0	-0 6
28	10	1 0	0 6
29	11	1 0	1 2
30	12	1 0	1 5
16A	9	2 0	2 4
19A	9	0 0	-0 6
		MIN	-0 9
		MAX	4 2
		MEAN	0 6
		SD	1 4
		Transuranic DCGL$_W$	20

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****
***** GAMMA SPECTRUM ANALYSIS *****
** Canberra Mobile Laboratory Services **
****

Report Generated On : 12/5/2002 10:08:28 AM

RIN Number : 03S0013
Analytical Batch ID : 0212034453
Line Item Code : RC10B019

Metal Coupon Samples from T441A and T121A composite Location # 30

Filename: C:\CMLS\Miscellaneous Data\High Ra-226 State\24 h

Sample Number : 03S0013-005.001
Lab Sample Number : CMLS-1975
Sample Receipt Date : 12/3/2002
Sample Volume Received : 1.53E+001 grams

Result Identifier : N/A

Peak Locate Threshold : 2.00
Peak Locate Range (in channels) 100 - 8192
Peak Area Range (in channels) : 100 - 8192
Identification Energy Tolerance : 1.000 keV

COPY

Sample (Final Aliquot Size) : 1.530E+001 grams
Sample Quantity Error : 0.000E+000
Systematic Error Applied : 0.000E+000

Sample Taken On : 10/15/2002 12:55.00 PM
Acquisition Started : 12/3/2002 4:36:46 PM

Count Time : 86400.0 seconds = 24 hours
Real Time : 86407.3 seconds
Dead Time : 0.01 %

Energy Calibration Used Done On : 10/4/02
Energy = -0.113 + 0.250*ch + -1.63E-007*ch^2 + 2.03E-011*ch^3

Corrections Applied:
None

Efficiency Calibration Used Done On : 12/4/02
Efficiency Geometry ID : 03S0013-006.001

Analyzed By: [signature] Date: 12-5-02

Reviewed By: Daniel Remington Date: 12-5-2002

****
***** Sample and QC Sample Results Summary *****
****

Site Sample ID · 03S0013-005.001

Analytical Batch ID . 0212034453

Sample Type (Result Identifier)· OBJ

Lab Sample Number : CMLS-1975

Geometry ID : 03S0013-006.001

Filename: C:\CMLS\Miscellaneous Data\High Ra-226 State\24 h

Detector Name: BEGE

MDA = Curie method as specified in Genie-2000 Customization Tools Manual Appendix B; Basic Algorithms.

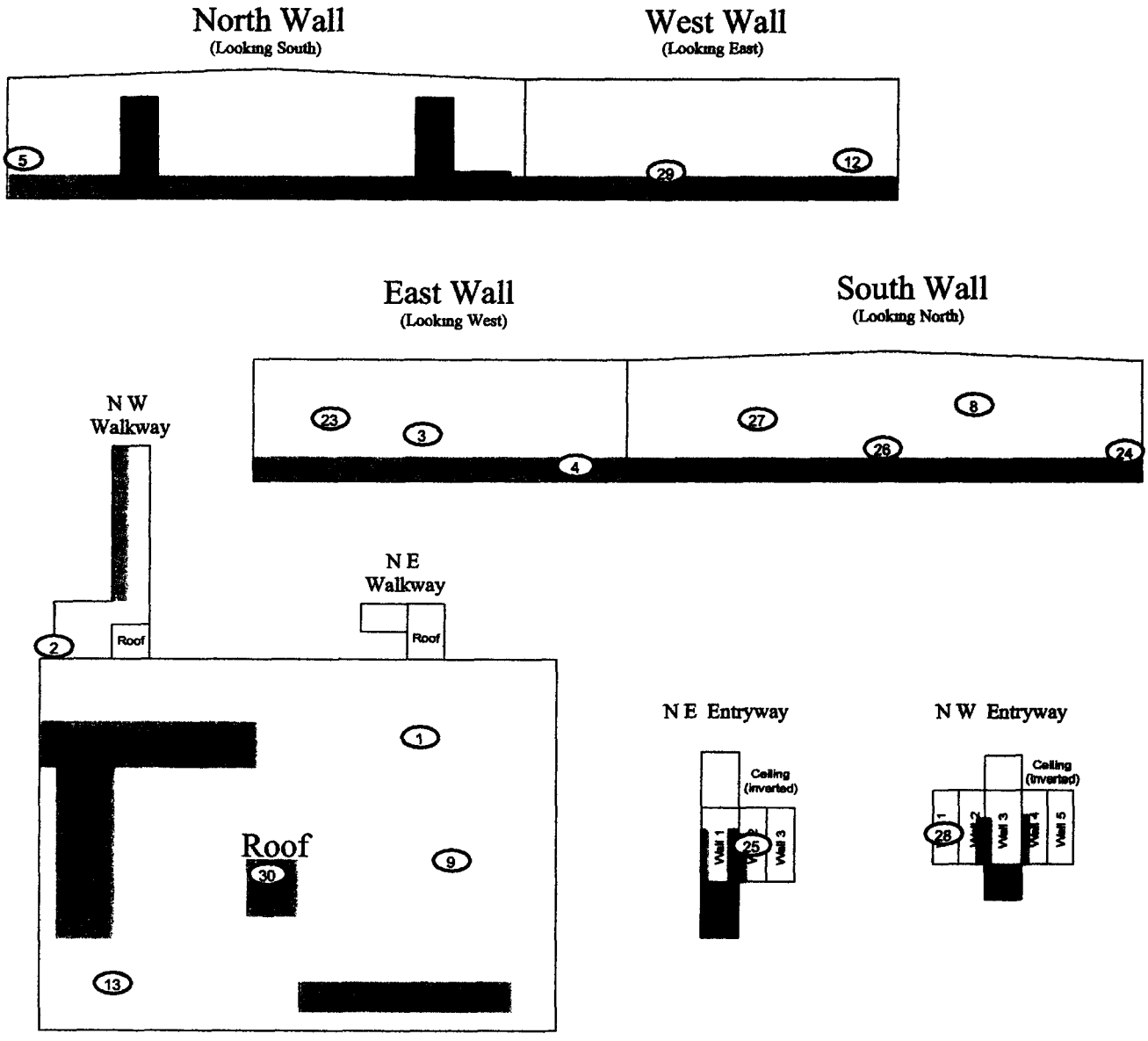
Analyte	Activity (pCi/grams)	2-Sigma Uncertainty (pCi/grams)	MDA (pCi/grams)
K-40	2.47E+000	9 20E-001	1.47E+000
CS-137	0 00E+000	0.00E+000	8.11E-002
TL-208	4 08E-002	2.03E-002	5.37E-002
PO-210 1	5 85E+003	4 57E+003	7.57E+003
BI-212	0.00E+000	0 00E+000	1.22E+000
PB-212	7 64E-002	3.79E-002	6.20E-002
BI-214	6 51E-002	3.85E-002	1.05E-001
PB-214	6 72E-002	2.81E-002	7.91E-002
RA-226	0.00E+000	0.00E+000	4 79E-001
AC-228	0.00E+000	0.00E+000	3.00E-001
TH-230	0.00E+000	0.00E+000	3.97E+000
Th-231	0 00E+000	0.00E+000	1.53E-001
PA-234	0.00E+000	0.00E+000	5.89E-002
PA-234M	0.00E+000	0.00E+000	7.84E+000
U-235	7.57E-002	4.64E-002	2 96E-002
U238/234	4.14E-001	3.20E-001	2.27E-001
AM-241	0 00E+000	0.00E+000	3.27E-002

1 - The 803 keV peak, which can be attributed to Po-210, was detected in the spectra This peak may be the result of the interaction of Pb-206(n,nÆ) which also produces a prompt gamma at 803 keV

PRE-DEMOLITION SURVEY FOR T441A

Survey Area 3 **Survey Unit** T441A-A-001 **Classification** 3
Building
Survey Unit Description Interior & Exterior **Total Roof Area** 208 sq m
Total Area 1108 sq m **Total Floor Area** 193 sq m

Building T441A
Exterior



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq = 1 sq m

Scan Survey Information
Survey Instrument ID #(s) 5, 6, 7, 8
RCT ID #(s) 5, 6, 7, 8

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Rocky Flats Environmental Technology Site

Prepared by GIS Dept. 303-966-7707 Prepared for

DynCorp
THE ART OF TECHNOLOGY

MAP ID 02-0321/T441A-EX February 5, 2002

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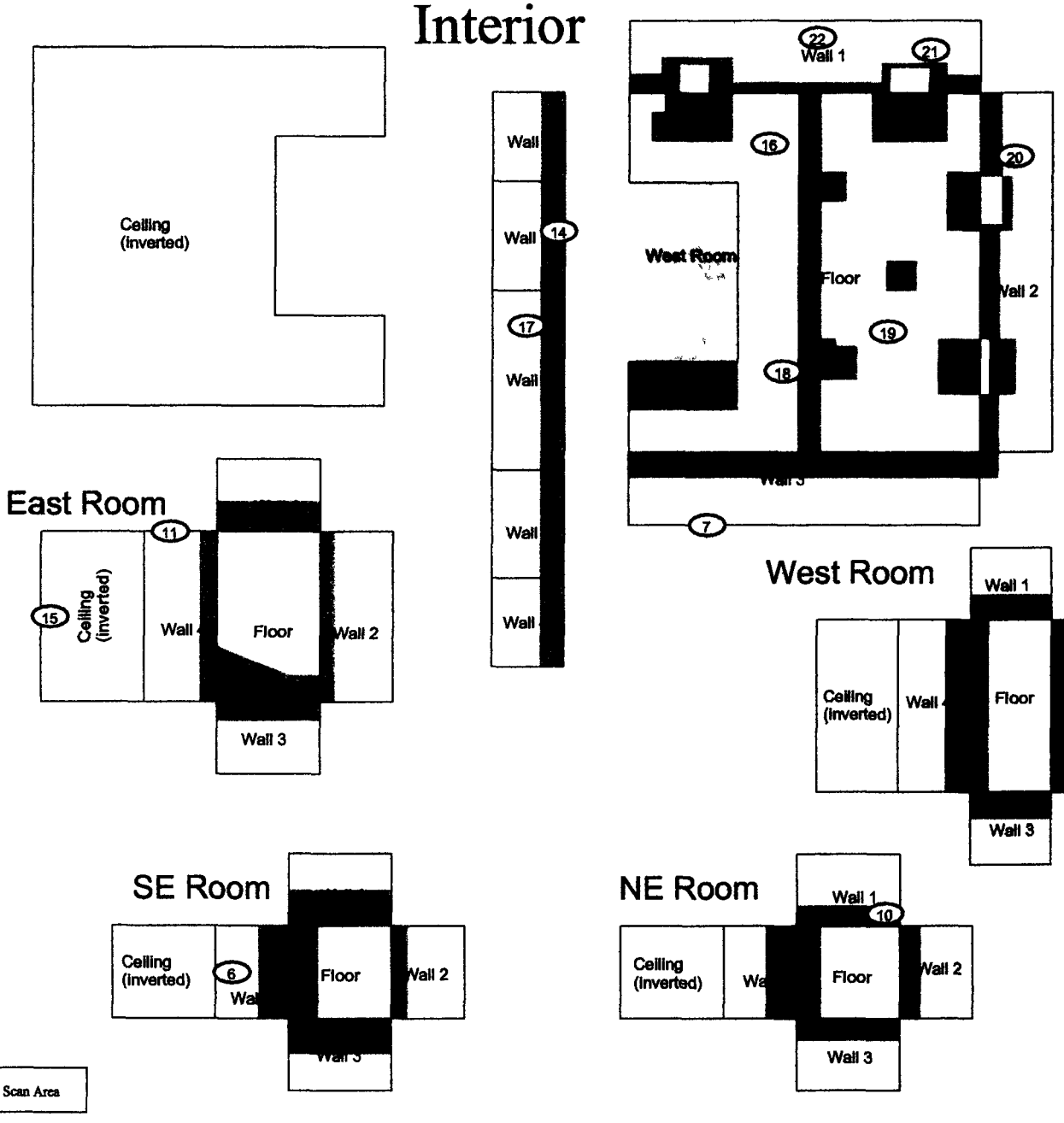
PRE-DEMOLITION SURVEY FOR T441A

Survey Area 3 **Survey Unit** T441A-A-001 **Classification** 3
Building T441A
Survey Unit Description Interior & Exterior **Total Roof Area** 208 sq m
Total Area 1108 sq m **Total Floor Area** 193 sq m

Building T441A Interior



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq = 1 sq m

Scan Survey Information
Survey Instrument ID #(s) 5, 6, 7, 8
RCT ID #(s) 5, 6, 7, 8

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by GIS Dept 303-966 7707 Prepared for

DynCorp
THE ART OF TECHNOLOGY

MAP ID 02-0321/T441A-IN February 5, 2002

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ATTACHMENT D

Chemical Data Summaries and Sample Maps

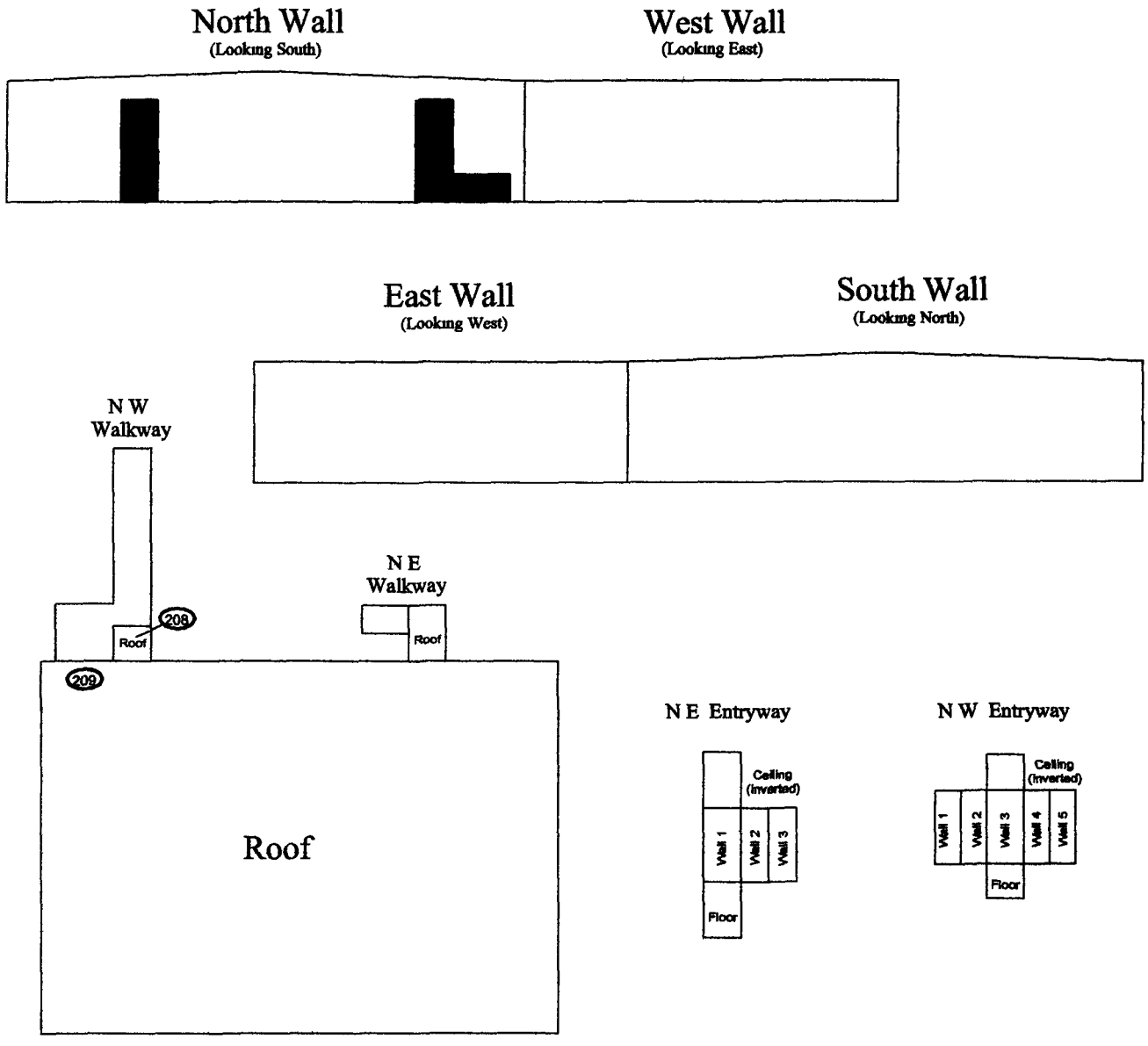
Asbestos Data Summary

Sample Number	Map Survey Point Location	Room	Material Sampled & Location	Asbestos Content Results
T441A				
T441A-10022002-315-201	201	Main	1' x 8' white glued-on ceiling tiles	None Detected
T441A-10022002-315-202	202	Main	1' x 8' white glued-on ceiling tiles	None Detected
T441A-10022002-315-203	203	East	Drywall only, west wall	None Detected
T441A-10022002-315-204	204	Main	Drywall only, wall 5	None Detected
T441A-10022002-315-205	205	Main	Dark brown base cove with yellow adhesive	None Detected
T441A-10022002-315-206	206	Main	9" vinyl floor tiles under carpet with black adhesive	4% Chrysotile
T441A-10022002-315-207	207	Northeast	Dark brown base cove with yellow adhesive	None Detected
T441A-10022002-315-208	208	West Enter	Gray asphalt shingles	None Detected
T441A-10022002-315-209	209	Roof	North edge of black tar roofing	60% Chrysotile
T121A				
T121A-10022002-315-210	210	Main	2' x 4' white acoustical drop ceiling tile with "worm" pattern	None Detected
T121A-10022002-315-211	211	Main	2' x 4' white acoustical drop ceiling tile with "worm" pattern	None Detected
T121A-10022002-315-212	212	Main	Drywall only with beige fabric, east wall	None Detected
T121A-10022002-315-213	213	Main	Drywall only with beige fabric, north wall	None Detected
T121A-10022002-315-214	214	1	Drywall only, east wall	None Detected
T121A-10022002-315-215	215	2	Drywall only, south wall	None Detected
T121A-10022002-315-216	216	Main	Dark brown base cove with yellow adhesive	None Detected
T121A-10022002-315-217	217	2	Black counter top laminated to wood substrate	None Detected
T121A-10022002-315-218	218	2	2' x 4' white acoustical drop ceiling tile with "worm" pattern	None Detected

CHEMICAL SAMPLE MAP

Building: T441A - Exterior

Building T441A
Exterior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq = 1 sq m

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by GIS Dept 303-966 7707

Prepared for

DynCorp
THE ART OF TECHNOLOGY

MAP ID 02-0321/T441A-EX-ASB October 2, 2002

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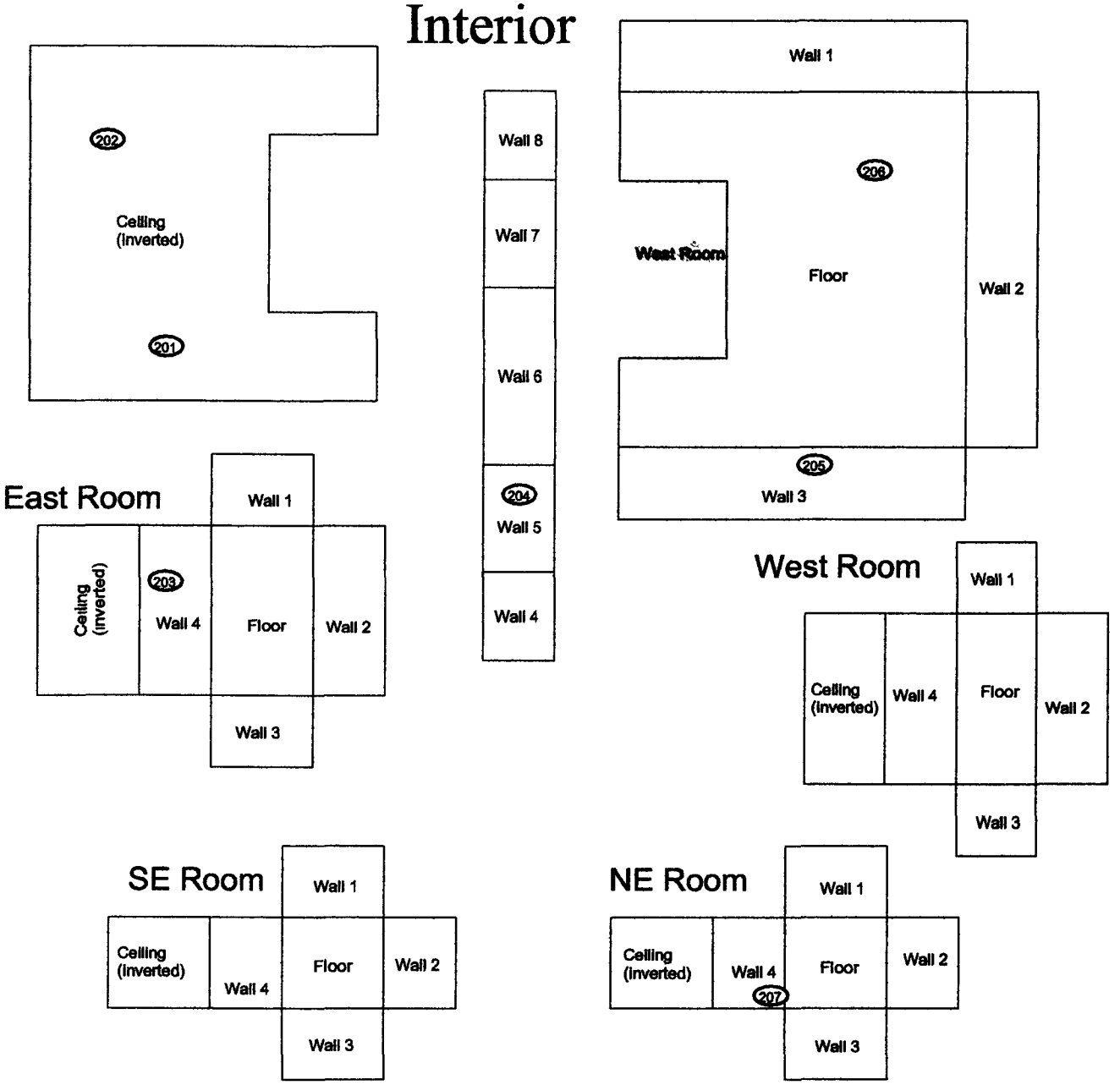
CHEMICAL SAMPLE MAP

Building: T441A - Interior

Building T441A Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq = 1 sq m

US Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept 303-966 7707

Prepared for

DynCorp
THE ART OF TECHNOLOGY

MAP ID 02-0321/T441A-IN-ASB October 2, 2002

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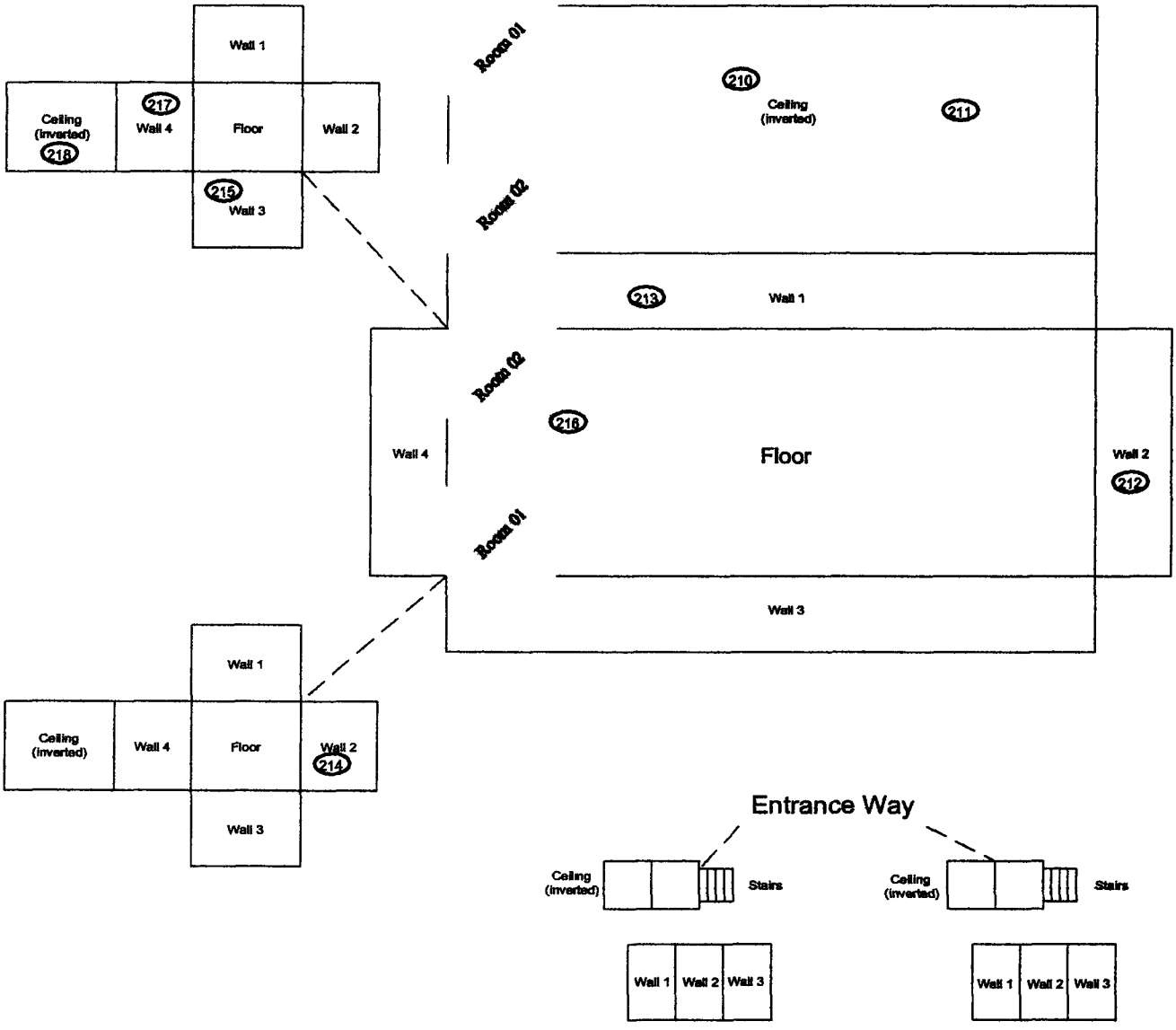
CHEMICAL SAMPLE MAP

Building T121A Interior of Building

T121A Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq m

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by GIS Dept. 303-966-7707

Prepared for: [redacted]

DynCorp
THE ART OF TECHNOLOGY

MAP ID 02-0888/T121A-IN-ASB October 2, 2002

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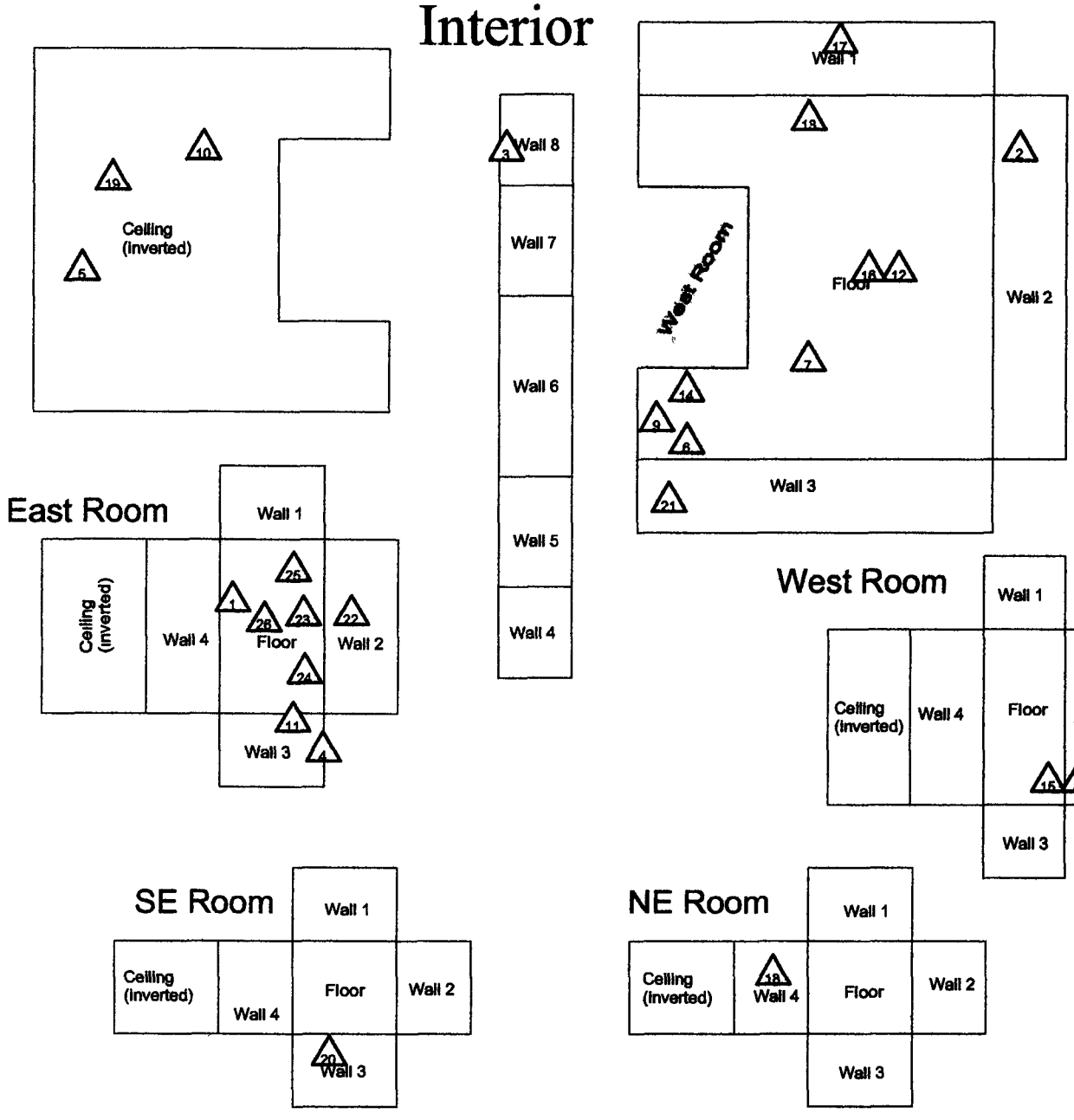
Beryllium Data Summary

Sample Number	Map/Survey Point Location	Room	Sample Location	Result (µg/100 cm²)
T441A				
T441A-09242002-315-101	1	East	On carpet	< 0.1
T441A-09242002-315-102	2	Main	On east wall	< 0.1
T441A-09242002-315-103	3	Main	On west wall	< 0.1
T441A-09242002-315-104	4	East	On south wall	< 0.1
T441A-09242002-315-105	5	Main	On ceiling	< 0.1
T441A-09242002-315-106	6	Main	On carpet	< 0.1
T441A-09242002-315-107	7	Main	On carpet	< 0.1
T441A-09242002-315-108	8	West	On east wall	< 0.1
T441A-09242002-315-109	9	Main	On carpet	< 0.1
T441A-09242002-315-110	10	Main	On ceiling	< 0.1
T441A-09242002-315-111	11	East	On south wall	< 0.1
T441A-09242002-315-112	12	Main	On carpet	< 0.1
T441A-09242002-315-113	13	Main	On carpet	< 0.1
T441A-09242002-315-114	14	Main	On carpet	< 0.1
T441A-09242002-315-115	15	West	On carpet	< 0.1
T441A-09242002-315-116	16	Main	On carpet	< 0.1
T441A-09242002-315-117	17	Main	Top of red fire suppression pipe, north wall	< 0.1
T441A-09242002-315-118	18	Northeast	Window sill, west wall	< 0.1
T441A-09242002-315-119	19	Main	Top of fluorescent light fixture, ceiling	< 0.1
T441A-09242002-315-120	20	Southeast	Window sill, south wall	< 0.1
T441A-09242002-315-121	21	Main	Top of red fire suppression pipe, SW corner, south wall	< 0.1
T441A-09242002-315-122	22	East	On east wall	< 0.1
T441A-09242002-315-123	23	East	On carpet	< 0.1
T441A-09242002-315-124	24	East	On carpet	< 0.1
T441A-09242002-315-125	25	East	On carpet	< 0.1
T441A-09242002-315-126	26	East	On carpet	< 0.1
T121A				
T121A-10022002-315-101	101	Main	Top of 2' x 4' acoustical drop ceiling tile	< 0.1
T121A-10022002-315-102	102	Main	Top of 2' x 4' acoustical drop ceiling tile	< 0.1
T121A-10022002-315-103	103	Main	Top of red fire suppression pipe, north wall	< 0.1
T121A-10022002-315-104	104	Main	Top of loud speaker, south wall	< 0.1
T121A-10022002-315-105	105	2	Top of red fire suppression pipe, north wall	< 0.1

CHEMICAL SAMPLE MAP

Building: T441A - Interior

Building T441A Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area m Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq = 1 sq m

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Prepared for

DynCorp
THE ART OF TECHNOLOGY

MAP ID 02-0321/T441A-IN-BE

Sept 24, 2002

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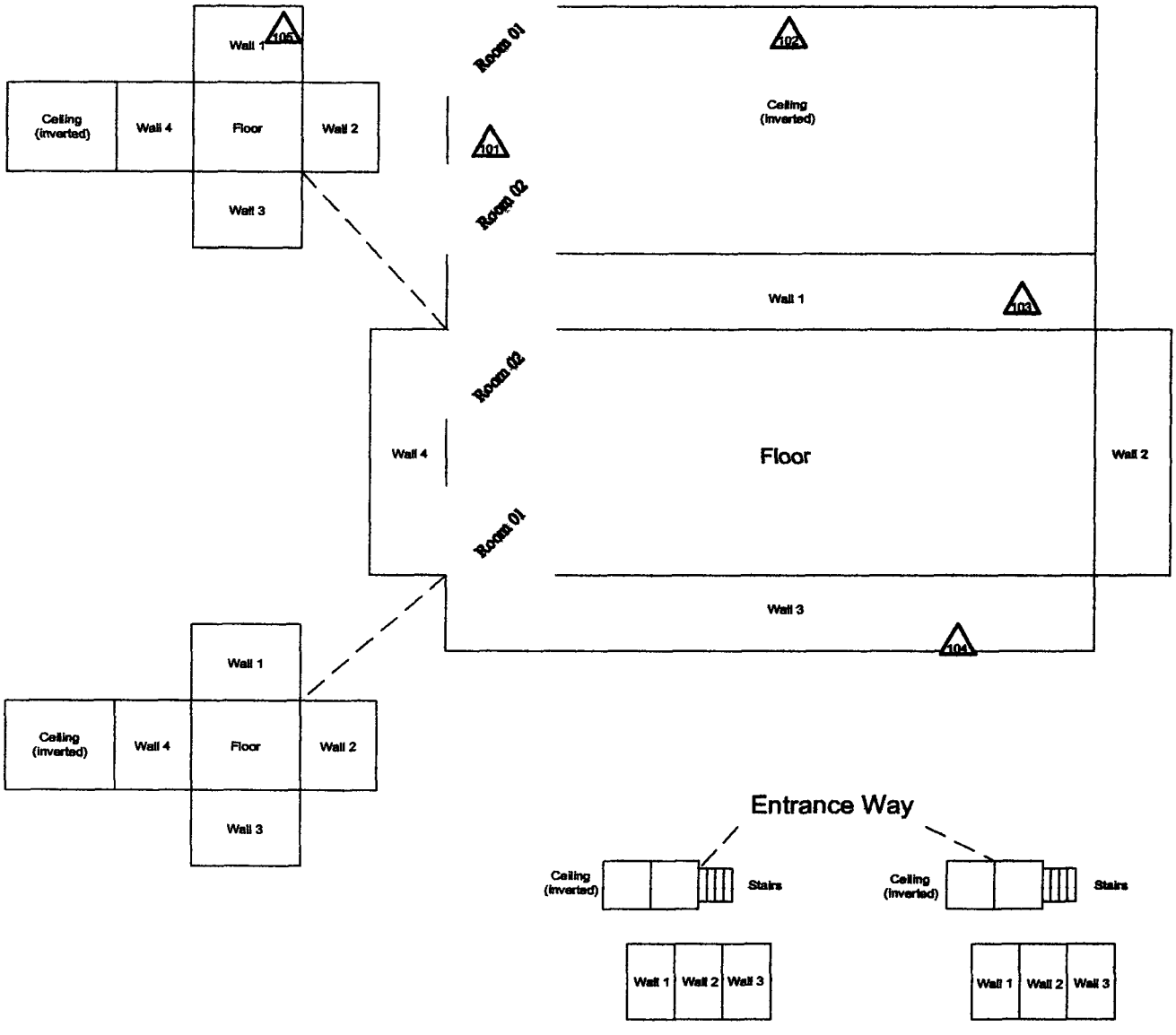
CHEMICAL SAMPLE MAP

Building: T121A Interior of Building

T121A Interior



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq = 1 sq m

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Rocky Flats Environmental Technology Site

Prepared by GIS Dept 303-966 7707

Prepared for:

DynCorp
THE ART OF TECHNOLOGY

MAP ID 02-0888/T121A-IN-BE

October 2, 2002

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ATTACHMENT E

Data Quality Assessment (DQA) Detail

DATA QUALITY ASSESSMENT (DQA)

VERIFICATION & VALIDATION OF RESULTS

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically asbestos and beryllium)

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed, the radiological survey assessment is provided in Table E-1, asbestos in E-2, and beryllium in E-3 A data completeness summary for all results is given in Table E-4

All relevant Quality records supporting this report are maintained in the RISS Characterization Project File The report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Areas Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location

Alpha and beta/gamma survey designs were not implemented for Buildings T441A and T121A based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process Survey designs were implemented for T441A and T121A based on the transuranic limits used as DCGLs in the unrestricted release decision process Elevated activity on exterior Survey Unit sample locations had coupon samples taken and analyzed by ISOCS Canberra gamma spectroscopy No transuranic isotope activity was detected, elevated activity was determined to be uranium and/or other naturally occurring isotope activity Consequently, coupon sample results were evaluated against, and were less than the uranium $DCGL_w$ (5,000 dpm/100cm^2) unrestricted release limit On this basis, elevated transuranic TSA net activity was reported as zero (0) in the TSA exterior data summaries, as applicable

Consistent with EPA's G-4 DQO process, the radiological survey design was optimized by checking actual measurement results acquired during pre-demolition surveys against model output with original estimates Use of actual sample/survey (result) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired

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SUMMARY

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs All data are useable based on qualifications stated herein and are considered satisfactory without qualification All media surveyed and sampled yielded results less than their associated action levels and with acceptable certainties, except asbestos Asbestos containing materials (non-friable) identified in T441A will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations and therefore, do not impact project decisions (i e , classification as Type 1 facilities) All beryllium results were less than associated investigative levels (0 1 $\mu g/100cm^2$) also confirming a Type 1 facility classification

Based upon an independent review of the radiological data, it is determined that the original project DQOs satisfied MARSSIM guidance All facility contamination levels were below applicable DCGL unrestricted release levels confirming Type 1 facility classification Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable RSPs and survey units were properly bounded

Chain of Custody was intact, documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process Level 2 Isolation Controls have been posted to prevent the inadvertent introduction of contamination into the facilities On this basis, Buildings T441A and T121A meet the unrestricted release criteria with the confidences stated herein

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Table E-1 V&V of Radiological Surveys For T121A and T441A

V&V CRITERIA, RADIOLGICAL SURVEYS		K-H RSP 16 00 Series MARSSIM (NUREG-1575)		
QUALITY REQUIREMENTS				
	Parameters	**Measure**	**frequency**	**COMMENTS**
ACCURACY	initial calibrations	90%<x<110%	≥1	Multi-point calibration through the measurement range encountered in the field, programmatic records
	daily source checks	80%<x<120%	≥1/day	Performed daily/within range
	local area background Field	typically < 10 dpm	≥1/day	All local area backgrounds were within expected ranges (i e , no elevated anomalies)
PRECISION	field duplicate measurements for TSA	≥5% of real survey points	≥10% of reals	N/A
REPRESENTATIVENESS	MARSSIM methodology Survey Units T121A-A-001 and T441A-A-001	statistical and biased	NA	Random w/ statistical confidence
	Survey Maps	NA	NA	Random and biased measurement locations controlled/mapped to ±1m
	Controlling Documents (Characterization Pkg, RSPs)	qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files), thorough documentation of the planning, sampling/analysis process, and data reduction into formats
COMPARABILITY	units of measure	dpm/100cm^2	NA	Use of standardized engineering units in the reporting of measurement results
COMPLETENESS	Plan vs Actual surveys usable results vs unusable	>95% >95%	NA	See Table E-4 for details
SENSITIVITY	detection limits	TSA ≤ 50 dpm/100cm^2 RA ≤ 10 dpm/100cm^2	all measures	RLC performed to PDS criteria MDAs ≤ 50% $DCGL_w$ per MARSSIM guidelines

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Table E-2 V&V of Asbestos Results

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
ASBESTOS	METHOD: EPA 600/R-93/116	LAB ---->	Reservoirs Environmental, Inc	
QUALITY REQUIREMENT		RIN ---->	RIN03Z0041 (T121A) RIN03Z0040 (T441A)	
		Measure	Frequency	COMMENTS
ACCURACY	Calibrations Initial/continuing	below detectable amounts	≥1	Semi-quantitative, per (microscopic) visual estimation
PRECISION	Actual Number Sampled LCSD Lab duplicates	all below detectable amounts	≥ 18 samples	Semi-quantitative, per (microscopic) visual estimation
REPRESENTATIVENESS	COC	Qualitative	NA	Chain-of-Custody intact completed paperwork, containers w/ custody seals
	Hold times/preservation	Qualitative	NA	N/A
	Controlling Documents (Plans, Procedures, maps, etc)	Qualitative	NA	See original Chemical Characterization Package (planning document), for field/sampling procedures (located in project file,) thorough documentation of the planning, sampling/analysis process, and data reduction into formats
COMPARABILITY	Measurement Units	% by bulk volume	NA	Use of standardized engineering units in the reporting of measurement results
COMPLETENESS	Plan vs Actual samples Usable results vs unusable	Qualitative	NA	See Table E-4, final number of samples at Certified Inspector's discretion
SENSITIVITY	Detection limits	<1% by volume	all measures	N/A

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Table E-3 V&V of Beryllium Results

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
BERYLLIUM	Prep NMAM 7300 METHOD OSHA ID-125G	LAB ---->	Johns Manville, Littleton, Co	
QUALITY REQUIREMENTS		RIN ---->	RIN03Z0042 (T121A) RIN02Z0970 (T441A)	
		Measure	Frequency	COMMENTS
ACCURACY	Calibrations Initial	linear calibration	≥1	No qualifications significant enough to change project decisions, i e , classification as a Type 1 facility confirmed All results were below associated action levels
	Continuing	80%<%R<120%	≥1	
	LCS/MS	80%<%R<120%	≥1	
	Blanks - lab & field	<MDL	≥1	
	interference check std (ICP)	NA	NA	
PRECISION	LCSD	80%<%R<120% (RPD<20%)	≥1	
	field duplicate	all results < RL	≥1	
REPRESENTATIVENESS	COC	Qualitative	NA	
	hold times/preservation	Qualitative	NA	
	Controlling Documents (Plans, Procedures, maps, etc)	Qualitative	NA	
COMPARABILITY	measurement units	ug/100cm^2	NA	
COMPLETENESS	Plan vs Actual samples usable results vs unusable	>95% >95%	NA	
SENSITIVITY	detection limits	MDL of 0 012 ug/100cm^2	all measures	

Table E-4 Data Completeness Summary

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Asbestos	T121A (interior)	12 biased (interior)	9 biased (interior)	No ACM present, all results < 1% by volume	40 CFR763 86, 5 CCR 1001-10, EPA 600/R-93/116 RIN03Z0041
Asbestos	T441A (interior & exterior)	12 biased (interior & exterior)	9 biased (7 interior/2 exterior)	ACM present > 1% by volume (2 sample locations)	40 CFR763 86, 5 CCR 1001-10, EPA 600/R-93/116 RIN03Z0040 Two locations (samples 206 and 209) were 4% and 60% Chrysotile (non-friable)
Beryllium	T121A (interior)	5 biased (interior)	5 biased (interior)	No contamination found at any location	OSHA ID-125G – RIN03Z0042 No results above investigative level (0 1 ug/100cm^2) or action level (0 2ug/100cm^2)
Beryllium	T441A (interior)	16 random/10 biased (interior)	26 real (16 random/10 biased) interior	No contamination found at any location	OSHA ID-125G – RIN02Z0970 No results above investigative level (0 1 ug/100cm^2) or action level (0.2ug/100cm^2)
Radiological	Survey Area 5 Survey Unit T121A-A-001 T121A (interior and exterior)	20 á TSA (15 random & 5 biased) & 20 á Smears (15 random & 5 biased) 2 QC TSA 5% scan	20 á TSA (15 random & 5 biased) & 20 á Smears (15 random & 5 biased) and 1 á TSA investigation sample 2 QC TSA (10 interior / 10 exterior plus 1 investigation sample) 5% scan	No contamination at any location, all values below unrestricted release levels	Uranium and/or Transuranic DCGL as applicable Elevated alpha activity was detected at sample locations 2, 4, 10 and 21 (197 5 dpm/100cm^2, 128 5 dpm/100cm^2, 119 5 dpm/100cm^2 and 200 2 dpm/100cm^2 respectively) that were greater than the Transuranic DCGL$_w$ (100 dpm/100cm^2) Three coupon samples were taken from locations 2, 4 and 21 and analyzed by gamma spectroscopy No DOE- Added (americium and plutonium) isotope activity was detected The elevated activity was determined to be uranium and other naturally occurring isotopes The resulting sample net activities for these locations are below the Uranium DCGL$_w$ (5,000 dpm/100cm^2) On this basis, the transuranic values for locations 2, 4, 10 and 21 are reported as zero (0) in the TSA Data Summary No further investigation required

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Table E-4 Data Completeness Summary

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area 3 Survey Unit T441A-A-001 T441A (interior and exterior)	30 á TSA (15 random/15 biased) & 30 á Smears (15 random/15 biased) 2 QC TSA 10% scan	30 á TSA (15 random/15 biased) & 30 á Smears (15 random/15 biased) 2 QC TSA (13 interior / 17 exterior) 10% scan	No contamination at any location, all values below unrestricted release levels	Uranium and/or Transuranic DCGL as applicable Elevated alpha activity was detected at sample location #30 (133 1 dpm/100cm^2) that was greater than the Transuranic $DCGL_w$ (100 dpm/100cm^2) One coupon sample was taken and analyzed by gamma spectroscopy No DOE- Added (americium and plutonium) isotope activity was detected The elevated activity was determined to be uranium and other naturally occurring isotopes The resulting sample net activity for this location is below the Uranium $DCGL_w$ (5,000 dpm/100cm^2) On this basis, the transuranic values for location #30 is reported as zero (0) in the TSA Data Summary All survey results are less than the applicable $DCGL_w$ unrestricted release limits and no further investigation is required

[A] Number of asbestos samples required are an estimate only, final number of samples is at the discretion of IH

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